

# The Antiquaries Journal

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## *Foreword*

THE present volume represents a new departure in the history of the Society of Antiquaries, and will, it is hoped, not only be found more useful by the Fellows, but enlist the interest and support of the general public in touch with antiquarian matters. A good many years ago I advocated an extension of our *Proceedings* on lines of this kind, but the conditions of the time were not favourable, and it was found to be impossible then to make any useful change. Now, however, when so many of our cherished traditions must perforce be abandoned, the opportunity has been seized to supplement changes arising from necessity with others tending to the advantage of the Society and of our studies. Our *Proceedings* have up to the present time contained only such matter as the title indicates; a bare record of events, some of the papers read at our meetings, and, for the last sixteen years, the discussions that followed. The resulting volumes have been of undoubted interest, and from the great variety of the matter it is probable that *Proceedings* have been more read and consulted than *Archaeologia*.

The Council, however, has felt that the Society might reasonably demand more from its officers than this merely domestic chronicle. The disappearance of one journal after another that had for years supplied information on antiquarian matters is another reason for the present undertaking. Moreover, the changes impending in the methods and constitution of the Society itself will call for a corresponding adaptation of our publications to the needs of our new environment; and these changes are of a nature to enlist the support of the outside public, a point to be considered when our normal expenditure is apt to exceed our income.

The present volume will contain all the matter found in its predecessors, but it will go much further, and an effort will be

made to furnish an adequate record of archaeological discovery within the limits of the Society's activity. We contemplate relations of a more intimate kind with the principal societies of the Continent, whose activities will be noted; and the simpler task of recording the archaeological progress of our own country will be our first charge. In this way the *Antiquaries Journal* will aim at providing a chronicle which may remove the reproach of insularity so often launched at us.

Another side of the work will deal with the literature in the wide field of archaeology. Each quarterly number will contain reviews of current archaeological works which will not of necessity be critical, but will give such information as will enable the reader to judge of the character of any work and of its utility to himself.

The programme outlined above will mean a considerable change in our habits, and a great deal of unpaid work in novel directions. The Council hopes that at this stage the Fellows will be charitable in their judgements, and will remember also that it is the duty of every Fellow to help when he sees an opportunity of doing so. A Society that may be said to date from the time of Elizabeth is called upon to reform itself, and pursue its unaltered aims in the spirit and method of this period of reconstruction. Finally, there is the business aspect, which will become more and more important; and the Fellows, who will continue to receive *Archaeologia* as well as the *Journal* in place of *Proceedings*, are asked to spread the knowledge of our venture among those likely to be interested.

Soc. Antiq. Lond.,  
Dec. 1920.

C. HERCULES READ,  
President.

## *The Latin Monastic Buildings of the Church of the Holy Sepulchre, Jerusalem*

By A. W. CLAPHAM, F.S.A.

THE church of the Holy Sepulchre and the site of the Holy Places is so vast a subject, both historically and architecturally, that only a lifelong acquaintance with its records and an intimate knowledge of every detail of its structure could excuse another attempt to trace its development. I propose, therefore, only to deal with the church so far as a sketch of its history and development form a necessary preface to the study of the Norman priory, which housed the canons during the brief but extremely interesting period of the Latin kingdom. The monastic buildings have not hitherto been thoroughly explored, owing to the difficulties raised while they were under the Moslem rule; I therefore took the exceptional opportunities which I had during my five months' residence in Jerusalem, with the British army there, to examine, with my friend Mr. E. G. Newnum, every part of the site.

The fullest and most recent account of the buildings is that by PP. Vincent and Abel of the Dominican School of Archaeology,<sup>1</sup> whose statements, which are backed by a wealth of original evidence, I have accepted as to the general history of the church. The account of the conventual buildings given by these authors is slight, and their conclusions are not always borne out by the existing evidence, while certain important buildings have entirely escaped notice. Our Fellow Mr. Jeffery's account of the monastic buildings in his recent work<sup>2</sup> is likewise handicapped by the impossibility of a full examination of the site at the time.

The Order of St. Augustine was in the period of the Latin kingdom the favourite religious order in Palestine. In addition to the priory of the Holy Sepulchre there were three other Augustinian houses in or near Jerusalem: The Dome of the Rock became the abbey of the Templum Domini; on Mount Zion stood the great convent of our Lady of Mount Zion, which enclosed the Cenaculum and other holy sites, and lastly the convent of the Ascension stood on the summit of the Mount

<sup>1</sup> H. Vincent and F. M. Abel, *Jérusalem—Recherches de Topographie*, etc., vol. ii (*Jérusalem nouvelle*), Paris, 1914.

<sup>2</sup> G. Jeffery, *The Holy Sepulchre*, Cambridge, 1919.

of Olives. In addition to these there was the cathedral church and convent of the Nativity at Bethlehem. Comparing this list with that of other orders, we find the Benedictines holding the abbey of Jehoshaphat with the Virgin's tomb attached, and for a time at least the church of St. Mary Latin; nuns of the same order were established at St. Anne's and at Bethany, while a Premonstratensian abbey occupied the summit of Mount Joy or Nebi Samwil and enclosed that prophet's tomb.

The architectural history of the church of the Holy Sepulchre and the adjoining sites may be divided into six main periods, namely: first, from the foundation by Constantine the Great to the destruction by the Persians (336-614); second, from the restoration by Modestus to the destruction by the Caliph Hakim (620-1009); third, from the restoration by Constantine Monomachus to the Latin conquest (1048-1099); fourth, the period of the Latin kingdom (1099-1187); fifth, from the conquest by Saladin to the great fire of 1808; and sixth, from that date to the present day.

Under Constantine the Great two great churches were raised, one subsequently known as the Martyrium and later still as Mar Constantine, standing to the east and of the basilican form; and one called the Anastasis to the west, circular in form and enclosing the Holy Sepulchre. The original form and grouping of these buildings with the subsidiary structures surrounding them is shown on the plan (fig. 1<sup>1</sup>), though the details of the Martyrium are more or less conjectural. Of the actual structure there remains to-day a large part of the base of the circular outer wall of the Anastasis and the south-east angle with the jambs of two out of three of the doorways opening into the vestibule of the Martyrium, together with two or more columns of the colonnade in front. All the remaining walls display internally the mortises by which the former marble casing was attached to the stonework. These buildings were consecrated in about 336 and remained intact until the capture of the city by the Persians under Chosroes II, when the Holy Places were burnt, but apparently not systematically destroyed, on 4th May 614. On the withdrawal of the Persians, consequent on the victories of Heraclius, the buildings were restored more or less to their original state by Modestus, Hegumenos of St. Theodosius. It was probably at

<sup>1</sup> The plans, figs. 1, 2, 3, are reproduced from the work of PP. Vincent and Abel and are reconstructions for which those authors are responsible. Though the detail is, of course, often conjectural, they may be taken to represent with sufficient accuracy the general lay-out of the buildings on the site at the various dates shown on them.

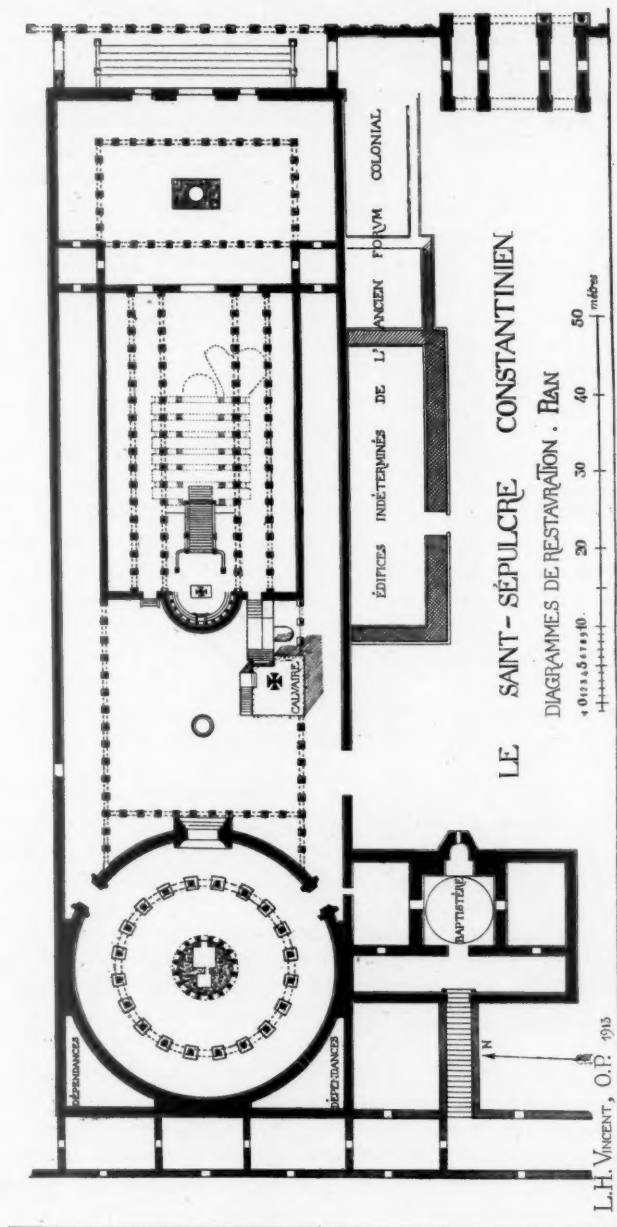


FIG. 1.

Reproduced from 'Jerusalem' by P.P. Vincent and Abel, by permission of the authors and of the Librairie Lecoffre, publisher.

this time that the three and possibly four apses were added to the Anastasis, of which the lower parts of those on the north, south, and west yet remain (fig. 2). These apses display, where they can be examined, a straight joint with the walls of Constantine, and are shown existing on the sketch plan of Arculph. At the Saracen conquest of 637 the buildings suffered little or no damage, and except for three renewals of the cupola and one of the roof of the Martyrium little was done to the structure in the eighth, ninth, and tenth centuries. About 935 a mosque was built in part of the vestibule of the Martyrium to commemorate the prayer of the Caliph Omar.

This period came to an end on 18th October 1009, when the Holy Places were completely destroyed by order of the Fatemite Caliph Hakim of Egypt. This destruction, according to contemporary Arab evidence, was carried out to the foundations, 'except where it proved too difficult'.<sup>1</sup>

After feeble attempts at partial repair, the restoration was taken in hand from funds supplied by the Byzantine Emperor Constantine Monomachus. The Anastasis was restored by 1048, and at the same time the four chapels flanking it, one on the north and three on the south, which still survive, were built, together with the existing or partly existing colonnades, on the north leading to the prison of Christ, and on the south bounding the parvis. No attempt was made to restore the Martyrium, except that the subterranean chapel of St. Helena was restored to use (fig. 3). These were briefly the more important buildings occupying the site when the Crusaders took the city on 15th July 1099.

Godfrey de Bouillon almost immediately introduced a chapter of twenty secular canons, to whom the church was entrusted, and in 1114 these canons were brought by the Patriarch Arnoul under the rule of St. Augustine, and the establishment became a priory of that order.

The new church must have been begun early in the twelfth century, and the scheme adopted was the bold one of including all the holy sites, with the Rock of Calvary itself, in one building. To this end the Anastasis was left standing except its eastern apse, and a large presbytery and transepts were built on, immediately to the east of it. The north transept was planned short in order to leave standing the Byzantine colonnade leading to the prison of Christ, and the south transept was planned long, to enable the whole of the Rock of Calvary to be included within it. The eastern arm is of the familiar apse and

<sup>1</sup> Yahia ibn Said, Vincent and Abel, *op. cit.*, ii, 246.

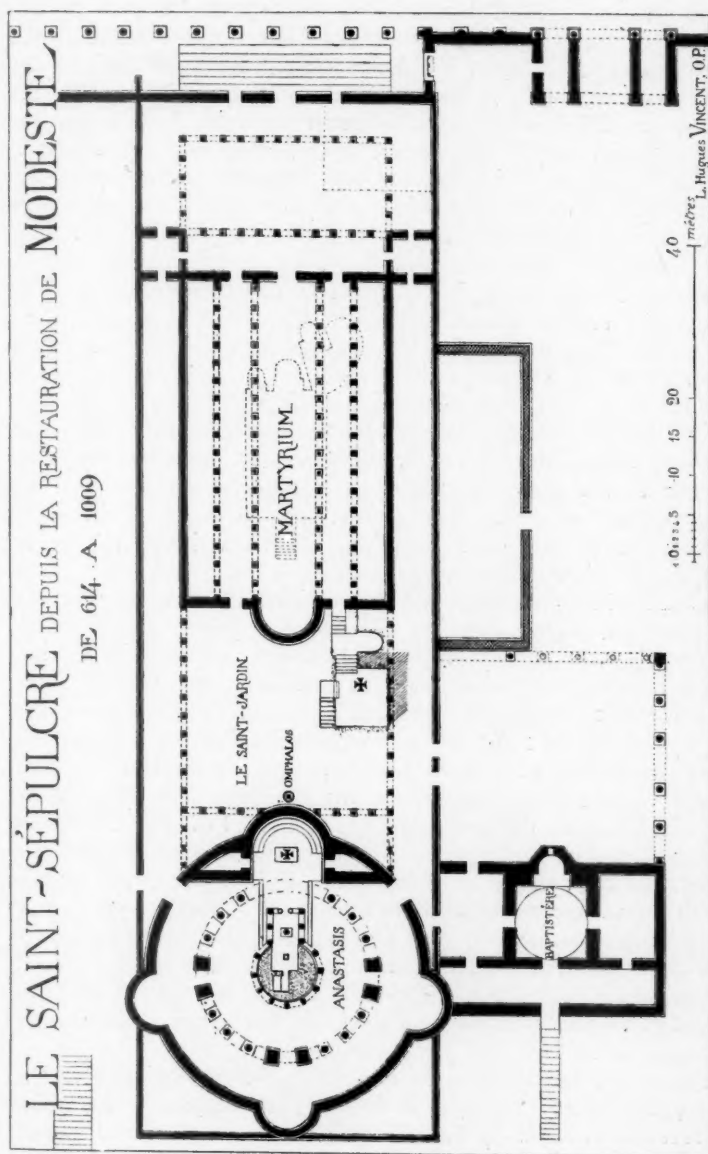


FIG. 2.

Reproduced from 'Jerusalem' by PP. Vincent and Abel, by permission of the authors and of the Librairie Lecoffre, publisher.

ambulatory type, with three 'bubbles' projecting from the ambulatory, as exemplified by a dozen and more examples in this country alone. Its chief distinction from English work of the period, apart from some Byzantine craftsmanship and the re-use of antique material, is in the circular cupola which crowns the crossing. The church was dedicated on 15th July 1149, the fiftieth anniversary of the capture of Jerusalem by the Crusaders.

The bell-tower which adjoins, and mars the symmetry of, the south front, was probably built before the dedication. It stands over, and incorporates part of, the Byzantine chapel of St. John the Evangelist, and when first built was much higher than at present. A cupola originally crowned this tower, but was destroyed by an earthquake in 1545.<sup>1</sup> The tower was reduced to its present height in 1719 in consequence of the upper stages having become unsafe.

The planning of the monastic buildings presented a difficulty owing to the insufficiency of the space available on both the north and south of the church. The buildings were consequently set out to the east with the cloister touching the centre of the three eastern chapels. The cloister was obviously built when these three chapels were standing, but there is no reason to suppose that it was incomplete in 1149.

The Latin patriarchate which adjoined the rotunda on the north-west was begun during the first few years of the twelfth century, but the heavily projecting buttresses of the still existing block in Christian Street seem to indicate a considerably later date for this portion of the building. On the capture of the city by Saladin in 1187 the patriarchate was alienated from the church and part of it turned into a convent mosque founded by the conqueror and known as the Khankah Salahiyyeh. The graceful minaret of this building still adorns the Haret el Khankah, and on the opposite side of the site stands the similar minaret of the mosque of Sidna Omar, built on a corner of the Muristan to commemorate the place of Omar's prayer, on the mistaken assumption that the present main entrance to the church represented the same feature in the time of the Caliph Omar. The priory buildings were abandoned or turned into dwellings at the Moslem conquest and remain to this day in the same state.

The only other incident in the history of the building which need be mentioned is the great fire of 12th October 1808, when the rotunda was entirely burnt out and other parts of the church

<sup>1</sup> A late fifteenth-century German woodcut showing the complete tower is reproduced in the *R. I. B. A. Journal*, 1911, 241.

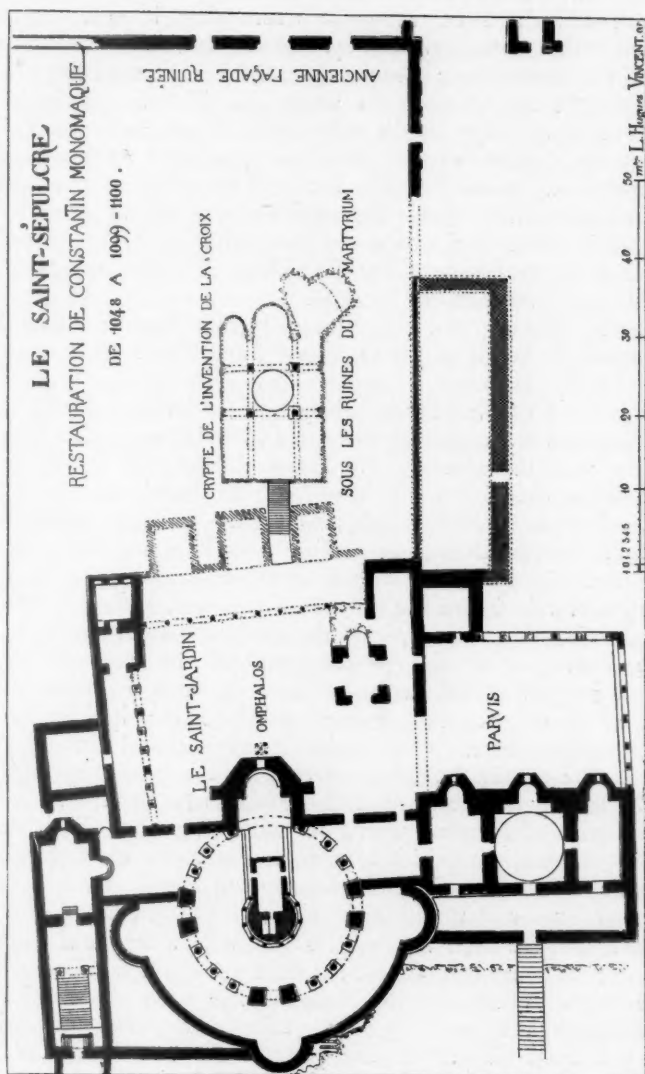


FIG. 3.

Reproduced from 'Jerusalem' by P.P. Vincent and Abel, by permission of the authors and of the Librairie Lecoffre, publisher.

sufficiently damaged to enable the Greeks to effect that disastrous restoration which has reduced the church of the Holy Sepulchre to the sombre and cavernous structure that it is to-day, a structure which enshrines side by side the tasteless pretentiousness of the more sober Greek style, with the puerilities with which the Greek attempts to adorn it. The arcade of the rotunda was entirely rebuilt with solid piers, and the light columns and arches of the Norman apse gave place also to solid masses of masonry, which not only render the ambulatory almost entirely dark, but are themselves totally devoid of merit.

Since this restoration, which was completed in 1810, the only material alteration has been the rebuilding of the cupola of the rotunda, which was finished in 1868.

The foregoing sketch is a necessary introduction to the study of the monastic buildings, which is the immediate subject of this paper.

The precinct of the church, priory, and patriarchate during the Latin kingdom was a rectangular space bounded by streets on all four sides; on the north by the Haret el Khankah, on the east by the Khan es Zeit, on the south by the Parvis and Pilgrim Street, and on the west by Christian Street. The only remaining portion of the twelfth-century precinct wall is about the middle of the north side, where a stretch of about twenty yards is still standing and exhibits on the outer face two springers of a stone vault, showing that at that period the street was a covered one.

The main part of the western half of the enclosure was occupied by the church with its adjoining chapels, while the whole of the north-west angle contained the buildings of the Latin patriarchate. The remainder of the area, including the whole of the eastern half, was covered by the buildings of the priory. In general the architectural remains exhibit the familiar characteristics of Norman work, but the ornamental detail displays a curious juxtaposition of typical western carving with Byzantine work of considerable delicacy and excellence. In the cloister annexes, and in the little cloister, late Roman columns and capitals have been re-used, and there is a frequent introduction of that curious architectural feature, the cushion voussoir.

The origin of the cushion voussoir has been discussed by Mr. Phéné Spiers<sup>1</sup> and by Mr. Jeffery, who are agreed in deriving it from Sicily. It occurs there in the cathedral and in the tower of the church of S. Maria dell' Ammiraglio, Palermo,

<sup>1</sup> R.I.B.A. *Journal*, 1910, 129. The latest examples of this motif with which I am acquainted are in the sixteenth-century gates of David and St. Stephen at Jerusalem (Bab Nebi Daoud and Bab Sitti Mariam).

which appears to have been built about 1143, and also in the church of S. Spirito, in the same town, built about 1173. It occurs also in isolated instances in France, but so far I have been unable to find a dated example in Europe earlier than the church of the Holy Sepulchre. In Cairo, however, there is a well-defined example in the flanking towers of the Bab el Futuh, a gate built in 1087-91.<sup>1</sup> The masonry of the towers bonds with the main gate, and appears to be contemporary with it. The feature appears to me to bear a close architectural affinity with the scalloped window and door heads which are a characteristic feature of the later Fatemite mosques and those of the Ayubide dynasty which followed them, and of which early examples are to be found in the mosques of El Akmar, 1125, and Saleh Talayeh, 1160. The gates of Cairo are ascribed by Makrizy to three brothers from Edessa, and Professor Lane Poole accepts this and assumes a Byzantine origin for the work, more especially as Greek masons' marks appear on the stones. It would be interesting to know whether any genuine Byzantine building exhibits this feature.

I shall now describe the remains of the monastic buildings, beginning with the great cloister and the buildings immediately surrounding it, and then passing to the little cloister and the infirmary block.

The GREAT CLOISTER was a slightly irregular square (114 ft. by 120 ft.) immediately to the east of the central apsidal chapel of the church. This left two irregular spaces to the north and south bounded by the main apse of the church. These spaces were roofed in and vaulted, and formed annexes to the cloister, that on the north forming a vestibule to the main processional entrance from the convent. It appears, indeed, that this was at first the only processional entrance, as the corresponding position on the south was occupied by the entrance to St. Helena's chapel and the existing doorway farther west is a cutting through the Norman wall. This last opening, however, appears to have formed at a later date the second processional entrance, as Theodoric (1175), describing his circuit of the cloister, says 'as one is re-entering the church from the other side (i. e. the south) there is a figure of Christ on the cross painted . . . to the eastward of this as one goes down into the venerable chapel of St. Helena'.<sup>2</sup>

The western side of the great cloister is still standing and shows the springers of the vault resting on coupled corbels with

<sup>1</sup> See the illustration in H. Salachi, *Manuel d'art musulman — l'architecture*, p. 98.

<sup>2</sup> Palestine Pilgrims Text Soc., vol. 17, Theodoricus of Würzburg.

a common abacus and the curious and unpleasing elbow bend to the shafts, which is a characteristic of much twelfth-century work in Palestine. The outer wall of the cloister remains also on the north and part of the south and west sides, but has been much altered. Three similar corbels remain in the north wall and two more in the south annexe, so that the general character of the cloister is established. Of the arcade wall the only fragment remaining is the north-west angle. At this point the pier with the springing of the arches on the south and east yet remains; the details are evidently the work of Byzantine masons and are of late Classic type. The pier has a moulded and enriched impost and plinth, and the archivolt has a heavy egg-and-dart ornament similar to the contemporary work in the mosque of Aksa in the Haram. The complete arcade probably had semi-circular arches not subdivided.

The north-west bay to the cloister is the only one still retaining its vault. It is open to the two bays of the north annexe, the vaults being supported on a central column with a late Roman Corinthian capital. The main vault ribs have one large and two small rolls of true Romanesque section, and the vault corbel in the north wall has a pair of foliated capitals evidently also of western origin. The processional doorway to the church is now cut in two externally by the ceiling of a modern chamber, so that only the richly moulded and pointed arch is visible.

On the south side of the central apsidal chapel of the church the outer wall of the cloister formed an open arcade of plain rectangular piers and three arches opening into the south-west annexe. These three arches are now all filled in, the two northern bays forming an Abyssinian chapel, with a plain vault. The third bay with its extension westwards belongs to the Greeks, and that in a line with the south cloister walk to the Copts. These two divisions were formerly both open to the cloister and had a plain pier at the angle of the cloister and a free column, now built up in the wall, farther west. Against the refectory wall the vaulting, which still exists, springs from coupled corbels, the westernmost having one capital only with the abacus continued across a flat pilaster. The north alley of the cloister, and possibly others also, had a second story of which traces remain in the north wall, where there are arched recesses, the piers of which rested on the cloister vault and do not exactly correspond with the bays below.

The area of the cloister, with that of most of the refectory, is now occupied by huts and shanties of Abyssinian priests, but a space remains open surrounding the dome of the subterranean chapel of St. Helena, a circular structure with six buttresses, some flat and

some semi-octagonal, and a pointed window in each face. This structure rises above the paved courtyard.

The middle part of the east side of the cloister was occupied by the chapter-house, flanked by a building on each side of doubtful use. Of these buildings part of the north wall of the chapter-house and some other fragments only remain.

The CHAPTER-HOUSE (72 ft. by 34 ft.) is now partly covered by a modern building and by a Moslem house and yard. In the middle of the remaining portion of the north wall is a massive and much weathered vaulting corbel, indicating that the building was roofed in four bays. There are no remains of the entrance from the cloister, but a broad foundation under the modern house indicates the position of the south wall, and for the east end a part of the still remaining wall of Constantine's atrium was utilized. This wall includes the great central doorway, opening, according to Père Vincent, into the atrium.

The building adjoining the chapter-house on the north is represented by its east and west walls, but now has a much later vault in four bays and a window of the same period in the west wall. The doorway in the same wall is partly original, as are the two plain archways opening into the dormitory sub-vault. The building south of the chapter-house has been almost entirely destroyed, but was bounded on the south by the side wall of Constantine's atrium, which is still standing.

The north side of the cloister is bounded for its whole length by the dormitory and its sub-vault. The night stairs remain at the west end of this building, but have been entirely modernized. They opened into the north-west angle of the cloister, conveniently near to the processional doorway to the church.

The DORMITORY was a building (160 ft. by 54 ft.) three bays in width, standing on a sub-vault also in three alleys. There is some evidence that the outer alley or aisle on the north was an addition to the plan, though there cannot have been much interval between the two periods of building. This addition is indicated by the thin wall at the west end of the outer aisle and by the angle showing in the small chamber east of the infirmary cloister; also the outer aisle is wider than the inner pair. At the west end of the sub-vault is a cross alley forming an entrance to the cloister from the outside. The outer doorway is probably original, but without distinctive features; it was covered by an open vaulted loggia on the north, and of this two piers and as many bays of plain vaulting remain. The southern doorway of this entry is also probably original and has a flat lintel supported by carved brackets much restored. With the exception of the southern alley the

middle portion of the sub-vault is occupied by cisterns, and at a lower level beneath them is the great reservoir called the cistern of St. Helena. The eastern end of the sub-vault remains largely unaltered; the side walls are faced internally with ashlar, from which springs the barrel vault which is crossed at intervals with ashlar bands. In the outer wall are two original single-light and pointed windows, and on the external face of this wall are three springers, probably of a vaulted passage on the site now occupied by the convent of St. Karalambos. In the east wall of the north alley of the sub-vault is a doorway of post-Latin date, and adjoining it an original ashlar springing of an arch, possibly connecting the dormitory with the former 'reredorter'. Below it is the crown of a pointed doorway, now almost buried.

Of the dormitory itself only two bays of the north aisle at the east end remain. They are incorporated in a building belonging to the Franciscans. There are two pointed arches and square piers with chamfered angles and hollow-chamfered imposts. The plain vaulting of these bays remains, and in the outer north wall are two original deeply splayed windows with pointed heads. The remainder of the dormitory is occupied by more or less modern buildings belonging to the Coptic convent.

The REFECTORY flanks the cloister on the south side and is the best-preserved portion of the monastic buildings. It measures 121 ft. by 29 ft., and was originally of one story only. Owing to a change in the ground level there is a plain vaulted undercroft under the three western bays. The south or outer wall is of great thickness owing to its incorporating in the lower parts a late Roman wall, possibly part of that built by Constantine to surround the Holy Places. Towards its western end is a Roman doorway with a joggled relieving-arch and a moulded architrave. Of the twelfth-century building the south wall remains standing for its whole length to the full height, but of the north wall only about two and a half bays remain at the west end. This part of the refectory is roofed and has been divided into two stories, the upper forming the chapel of the Greek convent of Abraham, and the lower being cut up into rooms. In the thickness of the south wall at this level is a passage raking upwards, possibly the remains of a pulpit, but more probably modern. The chapel has two original windows on each side with plain pointed heads, but the western one on the south has been cut away to form a doorway. The vault in this part of the building is intact, and has a plain square rib between the bays, springing from heavy corbels with square abaci. The vault is groined back over the windows. Externally the north wall is faced with ashlar and has flat pilaster buttresses between

the windows. The remaining four and a half bays of the south wall east of this chapel have each an original window and the springing of the main vault. The corbels in this part of the building are varied, and some have incised ornaments of volutes on the cushion capitals.

East of the refectory and in continuation of it is a building of three bays, of which the south and east walls remain standing. In the former are the springers of a rubble vault. Farther east in the same range was another apartment of which remains of the bases of two piers supporting the vault in the centre have been found. The north wall of this room is formed by the south wall of Constantine's atrium, already referred to; this wall has externally a succession of pilaster strips fairly close together dying into the plinth. They are rather similar to the work of the outer wall of the Haram at Hebron, and this similarity suggests an approximate date for that work. These two apartments, from their juxtaposition to the refectory, may reasonably be assigned to the buttery and kitchen. The last now forms part of the chapel of a Russian hospice.

This completes the buildings immediately surrounding the great cloister.

THE INFIRMARY CLOISTER (45 ft. square) lies north of and overlaps the annexe of the great cloister. In this annexe is the communicating doorway, now modernized. The cloister is four bays each way and the east walk remains open; the remaining walks have been partitioned off and cut up into rooms. Under the south-west part of the cloister is the so-called prison of Christ, approached by the Byzantine colonnade adjoining the north transept of the church.

The area of the open court has been reduced by half by the insertion of a modern arch springing from the east to the west arcade walls and supporting a platform above. The east walk of the cloister has four bays of plain vaulting springing on the east side from short circular columns of antique origin, with rough capitals, one of them rudely moulded. The bases are deeply buried. The arcade wall has two pointed arches of which the chamfered inner order has been removed, but it is continued down the central pier below the impost moulding. The two corner piers have round shafts worked on the angles, and the arch opening into the south walk of the cloister springs from a column against the outer wall, but is now built up. The middle pier of the south walk was apparently a column, with a second column opposite to it as a respond. The rest of the cloister presents no features of interest and has been much altered. The cloister

had an upper range probably on all four sides, but there is now an open flagged terrace here, and the former upper story is only proved by four ashlar springers of the vault, one on the west, two on the south, and one in the south-west angle. The outer walls remain standing only on part of the south and west sides. East of the cloister on the ground floor are two narrow dark vaulted chambers of doubtful use.

Adjoining the cloister on the north is an extensive vaulted building three bays in width, presenting some very puzzling features. It is of rough construction and must be of earlier date than the obviously twelfth-century building which has been built against it on the west side. In the middle of this west wall is a large doorway with a square head, evidently formerly external.

The narrow western bay with the wide bay adjoining it, forming a square in the middle of the building, is part of the original structure, but the two bays to the east are later additions or rebuildings and themselves show evidence of much alteration. If it be assumed that the original building terminated in three apses immediately to the east of the square bay where the later work begins, the plan is identical with that of the chapels of several of the smaller convents of the Greek rite still remaining in the city. In this plan the narrow western bay formed a narthex or ante-chapel, separated from the eastern part by the iconostasis or screen. In this case the existence of a Greek or Syrian convent on the site at the Latin conquest must be assumed, and, although I have found no documentary evidence of this, to judge from the numerous buildings of the class still existing it is not at all unlikely. In any case there is little doubt that the infirmary chapel of the Latin priory formed part of this block and that the existing building was its substructure. The roughness of the masonry and the lack of any trace of ritual arrangements seem to preclude the possibility of its being the chapel itself or that it served as the chapel of the assumed Greek convent which preceded it. The existing building above it is quite modern.

Adjoining the west side of this structure and overlapping about half of the west side of the infirmary cloister is a long vaulted apartment (107 ft. by 41 ft.), five bays long and two bays wide, extending almost to the northern wall of the precinct. There is little doubt that it, with an upper story now destroyed, formed the infirmary hall. A curious feature of the plan is that the vaulting system with its abutments is not set regularly within the outer walls, so that the depth of the responds varies from north to south on each side. The building is now divided by a modern wall into two unequal parts, the northern being in the occupation of

an oil merchant and the southern being the basement of the chapel of the Coptic convent. The south-west bay is also walled off to form a latrine. The condition of the southern part is deplorable ; it contains several open cesspools and drains and is unlighted, so that careful examination is both disgusting and hazardous. The ground level furthermore, in this part, has risen almost to the level of the spring of the vault. The northern part is much more free. The square piers have round shafts worked on the angles, and the quadripartite vault has ashlar bands of slight projection between the piers, forming pointed arches. In the north wall are two original deeply splayed windows with pointed heads, and farther east is an original entrance passage with ashlar jambs and a pointed barrel vault ; the external entrance appears to have been altered in the thirteenth century. In the north bay of the east wall is another original window with a pointed head and a moulded external label. The northern part of this building has now no structure above it, but over the southern part stands the chapel of the Coptic convent ; some walls of this building may be ancient, but all its existing features are modern.

Adjoining the infirmary hall on the north-east is an irregular apartment of two bays dating from later in the twelfth century, as it covers the original window already referred to. It has quadripartite vaults divided by a skewed and pointed arch springing from corbels with an inverted hook moulding. In the south bay of the east wall is a fine pointed doorway of two recessed orders with curious mouldings, probably dating from the thirteenth century.

This completes the buildings belonging to the infirmary block, and the only remaining structure of the group is the former PALACE OF THE PATRIARCHS which adjoins Christian Street and abuts on the west side of the rotunda. As still existing, it is a building of three stories, with two stories of substructures partly cut out of the rock below. The floor, level with the street, is cut up into shops and a caracol or police-station ; the floor above is mainly occupied by the mosque of the Khankah Salahiyyeh, and the top floor forms the dwelling of the Imam of the mosque. The street front now consists of six bays divided by boldly projecting buttresses plainly tabled back at the top and all of good ashlar. The inner or eastern wall, where it rises above the rotunda, has been much restored, but part of the old facing remains. In the northernmost bay of the street-front is an elaborate doorway of two recessed orders, with two shafts to each jamb having carved and foliated capitals, much damaged, and a pointed and moulded arch. This entrance is placed axially with the chapel now known as that of the Apparition, to which (as Père Vincent conjectures)

a descent was made by a long flight of steps terminating in a vestibule, of which the two fine Byzantine columns remain. It is possible that the Apparition chapel formed the chapel of the patriarchate during the Latin kingdom. The rest of the range is plainly vaulted with square ribs between the bays, and in the south wall is a blocked window showing that the original building extended no farther than it does at present in that direction. The end room towards the south has in its north wall two Corinthian columns built up, but formerly opening into the next apartment by an open arcade; they are of late Roman work re-used.

The first floor is occupied by the mosque founded by Saladin, and has a mihrab in the south wall. In general character it is similar to the floor below, and has a vault with square ribs and square abutments against the walls. As it has never been cut up by partitions, it may have been the hall of the patriarchate, though the vault is low and the width meagre. There are two original windows with pointed heads, now blocked, in the west wall. Only one room on the second floor is of interest; it is at the south end of the range and adjoins the rotunda. It is divided into two bays by a vaulting rib which springs from columns against the north and south walls, with sculptured capitals. The northern capital is much defaced, but the southern one has foliage and a face of Romanesque character.

Another wing of the palace apparently extended at right angles to this building and formed the northern boundary of what is now the Franciscan convent, but except for part of its southern wall there are no remains. Other remains incorporated in the out-buildings of the Khankah Salahiyeh may indicate further buildings in that direction, but their traces are so fragmentary that it is not improbable that they are only re-used material.

This completes the list of the Romanesque buildings now standing within the precinct, and in conclusion I should like to express the hope that, now that the city has passed into our hands, something may shortly be done to redeem the surviving remains of this celebrated convent from the condition of squalor and neglect into which their present custodians have suffered them to fall.





STONEHENGE IN 1894

## *Stonehenge : Interim Report on the exploration*

By LT.-COL. W. HAWLEY, F.S.A.

AFTER the death of Sir Edmund Antrobus of Amesbury Abbey, certain properties, including Stonehenge, were in 1915 sold by his representatives. Fortunately for all students of archaeology, Stonehenge was purchased by Sir Cecil Chubb of Bemerton, who generously presented it, together with some thirty acres of adjoining land, to the nation. The acquisition of this additional land has made it possible to set back an unsightly fence and divert a cart-track some distance from the monument. It was at once recognized by H.M. Office of Works that the monument required immediate attention, and it was therefore decided, by the advice of the Chief Inspector of Ancient Monuments and the Ancient Monuments Board for England, that a careful examination of it should be made, and work for its preservation taken in hand. It was decided that the stones which were in a dangerous state should receive attention first, and then that those which had fallen in recent times should be re-erected, care being taken that all appearances of restoration should be avoided. By the courtesy of the Office of Works, the Society of Antiquaries was given every facility for carrying out a scheme of archaeological research on the site during the progress of the work, and the writer was appointed the representative of the Society. Preparations were begun in September 1919, but were much retarded owing to difficulties of transport and the delay in erecting two huts and the assembling of the large equipment necessary. It was not until the end of the year that work was actually begun.

In recording the finds made during the course of the exploration of the site, no account has been taken of the modern rubbish unless it has been of special interest or was found at an unusual depth, as it does not concern the ancient history of the monument. At one time coursing meetings were annually held near Stonehenge, and, before each meeting, glass and other noxious rubbish likely to hurt the animals' feet were collected and buried, which will partly account for some of the modern objects found.

As a preliminary, mention may be made of the excavation of some prop-holes beyond the outer circle, as they give an idea of the state of the soil about the monument. The first hole

measured 2 ft. 6 in. by 1 ft. 6 in. After removing a few inches of humus we passed through earthy chalk rubble until solid chalk was met with at a depth of 3 ft. The rubble was full of modern rubbish such as broken glass, crockery, pipe-stems, and other things, which decreased in number from the top. It also contained 75 sarsen chips, 70 of foreign stone (or bluestone), 9 fragments of bone, 7 of Bronze Age and 4 of Romano-British pottery, and 6 rough pieces of flint showing signs of working. The second hole was of the same area, and solid chalk was met with a foot below the surface. In addition to modern rubbish, it gave 5 sarsen chips and 18 of foreign stone. Two similar holes were dug in December 1919, both 18 in. deep. In addition to modern rubbish the first yielded 5 sarsen chips and 28 of foreign stone; the second, 1 sarsen chip and 40 of foreign stone, 11 small pieces of Romano-British pottery, and a small third brass of Tetricus, almost illegible.

It was determined to begin work on stones nos. 6 and 7 on the south side of the outer circle, which had been propped up for a long time and appeared to be most in need of attention. No. 7 listed towards the south and no. 6 in the opposite direction; and by their combined movements the lintel was forced out of position to such an extent that, at one end, only a small portion of it rested on the upright stone below (fig. 1). On 27th November this lintel, weighing between six and seven tons, was safely lifted off (pl. III), after having been encased in a timber cradle and protected with felt. We then had to wait until 3rd December, when the upright stone, no. 7, having been similarly encased, the removal of the surrounding soil was begun. Our measuring frame, though larger, was exactly on the same principle as that described by Mr. Gowland in his 1901 report on Stonehenge, and proved a most useful and ready method of recording the position of things found in definite areas. We also used the same datum line as he did, in order that the past and present work might be uniform. Excavations were begun in front of the outside face of no. 7 stone, that is on its south side, in an area of about 7 ft. by 4 ft. 6 in. The soil was removed in layers according to datum level, usually 6 in. at a time.

The first layer of earthy chalk rubble, rather flinty, contained 26 sarsen fragments or chips, 40 of foreign stone, 8 roughly worked flints, 4 flint implements, 10 bone fragments, a piece of charred wood axe-marked, 5 fragments of Romano-British pottery, 1 piece of burnt clay and 1 of brick, and 1 piece of glazed earthenware.

The next layer in the same, but less flinty, soil gave a sarsen

hammer-stone, 19 sarsen fragments, 41 of foreign stone, 2 roughly worked flints, and 1 fragment of Romano-British pottery.

In the next layer, of earthy chalk-rubble, were a large block of sarsen, 2 sarsen hammer-stones, 13 sarsen chips, 17 of foreign stone, 7 roughly worked flints, 5 pieces of Romano-British pottery, 1 Romano-British boot-nail, 2 pieces of bone, and traces of burnt wood ashes.

The fourth was of loose chalk rubble, and we came to the chalk rock sloping down towards the stone: near the stone the rubble was mixed with a little clayey earth.

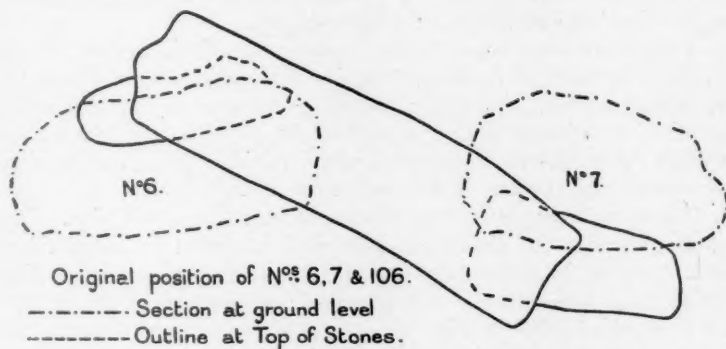


FIG. 1. Position of stones 6 and 7 and of lintel before work was begun.

In this layer were 4 pieces of hammer-stones, 53 sarsen chips, 31 of foreign stone, 1 roughly worked flint, 2 bone fragments, some burnt wood ashes, and 9 large sarsen blocks, used for packing the stone on that side, occupying a space of about 4 ft. along the face and extending 18 in. outward from it. We lifted out four of these blocks.

In the fifth layer the sloping chalk rock ended in a well-defined line, and descended perpendicularly like a short wall from 1 ft. to 14 in. deep and 9 in. from the stone: a little loose rubble above the wall contained twelve sarsen chips. This we took out with the five remaining packing blocks. These and the four previously removed were surrounded with clayey rubble and placed against the stone in a line with the top of the chalk wall, their lower portions being wedged between it and the stone. All the blocks showed traces of fire and so did the stone-face opposite them. Clayey rubble mixed with a quantity of wood ash filled the remainder of the space down to bed-rock, in which we discovered a round hole,  $4\frac{1}{2}$  in. in diameter, descending into the chalk rock.

Shortly afterwards we discovered four more holes, all more or less in a line and parallel to the low chalk wall ; and one, at the south corner of the stone's base, or what we have sometimes called its toe, was 6 in. in diameter and descended 2 ft. A small portion of the toe appeared to have been cut away to receive the side of a post. All of these were evidently post-holes, and the wood ash around seemed to signify that they had been burnt.

This state of things may perhaps be accounted for as follows. The stone in common with the rest in the outer circle was erected from the outside. It was slid down the incline we noticed until its base was just over the hole : it was then drawn upright against a prop behind and held by four guy-ropes.

The posts were then driven in to steady it in front, helped perhaps by wooden baulks at the side and back, where the chalk rock rose higher. The stone would perhaps be not far out of its required position, and the peculiar shape given to the foot would enable the workmen to adjust it inch by inch. Then the packing blocks would be securely wedged around it.

The protruding posts would then have to be dealt with. To extract them would shake and disturb the stone : to leave them would result in their rotting and leaving empty cavities, which would have loosened the soil later on ; so they were burnt and all interstices filled in with clayey rubble, over which came the other rubble we found, well rammed in.

The face of the stone was now exposed to view, its base being 5 ft. from ground-level. From just below ground-line on the right, the side of the stone took a curve downwards, its central axis being met by a lesser curve from the opposite direction. The lower front was a good deal undercut, and at the extreme left the base ended in a blunt point or toe : this toe was drawn off the ground, the tilt having produced a cavity below it (fig. 2).

As its stability was doubtful, two additional steel ropes were secured about the stone, and a portion of its weight was taken by the crane.

On 16th December an excavation was made on the west side of this stone in an area 4 ft. long by 3 ft. wide, and to a depth of about  $2\frac{1}{2}$  ft., in order that wooden baulks might be inserted to overcome the pressure from the lower part of the stone in that direction, which prevented our going deeper at that time. In the first layer below humus we got 8 sarsen fragments, 96 of foreign stone, 6 of bones, a horn-core, 3 fragments of Romano-British pottery, part of an armlet of that period made of two-strand bronze wire, and a small hone of the same period.

The second layer gave 1 fragment of a sarsen hammer, 42 sarsen

chips, 266 of foreign stone, 6 fragments of Romano-British pottery, 3 pieces of glazed earthenware, an iron nail and buckle, and one or two indefinite fragments of brass or bronze.

The third layer gave 2 small sarsen hammer-stones, 22 sarsen

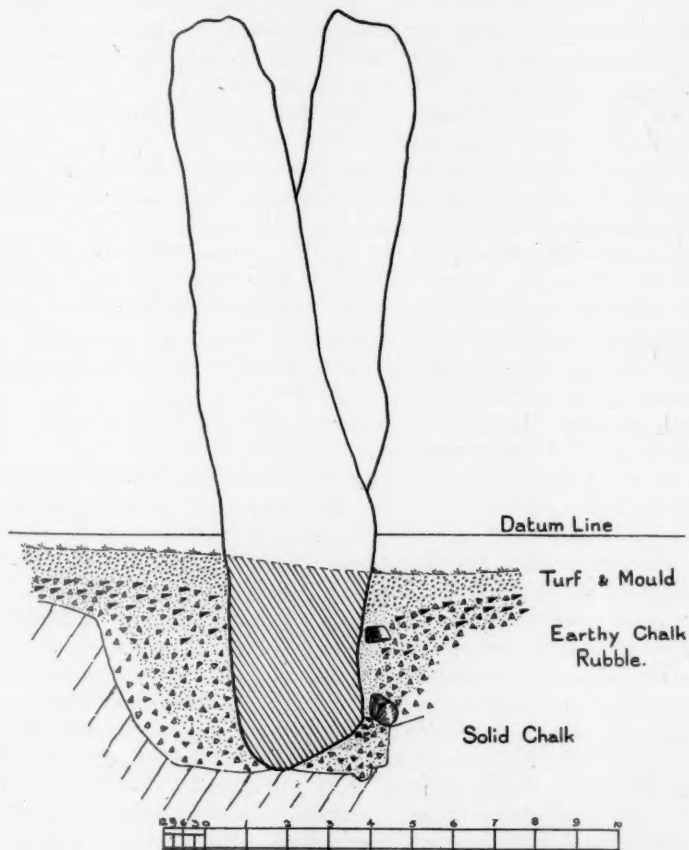


FIG. 2. Section through stone 7 looking NE. Stone 6 in the background.

chips, 95 of foreign stone, 3 bone fragments, 4 roughly worked flints, and a piece of glauconite (green sandstone such as Old Sarum was built with, found locally).

The wooden baulks were then inserted, and we did not return to this spot until 20th January, after the stone had been made

safe, when we removed the remaining soil down to the base of the stone on the west.

The fourth layer contained 9 sarsen fragments, 33 of foreign stone, 7 small pieces of glauconite, and 1 piece of Romano-British pottery.

The last layer contained 20 sarsen fragments, 65 of foreign stone, 3 rough flints, and 3 bone fragments. We also came upon the packing stones, five in number, three being large blocks of glauconite and two of sarsen: these were at 4 ft. 6 in. from the surface, and for another foot there was clayey rubble with nothing in it down to the chalk rock.

Nearly all our excavations were conducted in the manner just described. At first the stones, encased in cradles, had steel rope guys attached to them on all sides, anchored to the ground: but later iron girders were added to the cradles and placed longitudinally below the lowest timbers at their sides. The projecting ends of girders had jacks placed under them on thick iron plates, supported when necessary by concrete bases. This arrangement gave perfect security, besides being a ready means of moving the stone in any direction.

Up to this point I have given an inventory of objects found in each layer of our excavations. I shall now mention only the interesting finds, for there is a tedious recurrence of chips and other things, all the soil within the area of our frame having been sieved.

Our next excavation was one along and against the back of the stone on the north. In the upper soil a foot below the surface we came upon some rotted timber, evidently remains of a timber support between stones 6 and 7, existing in 1904. We found sarsen chips as usual, and foreign stones, greatly in excess of the sarsen, and on the north-east came upon a sarsen block at 17 in. from the surface, and afterwards two more 10 in. lower down, and still lower down, at 39 in., was a block much larger than the others, a little to the right of those above and under the curve of the stone, wedged between it and the side of the hole it stood in.

About a foot from this block and near the stone was a farthing of George III. This coin, when lost, had probably fallen close to the stone. The stones become heated by the sun, causing the soil to recede sufficiently to allow small objects to drop a considerable distance. The recurrence of this year after year, assisted by long droughts and other factors of movement, causes small things to descend to low levels and shows what reliance can be placed on small metal finds.

We found other sarsen blocks placed nearly opposite the middle

of the face: two at 15 in. from the surface, one at 19 in., and two at 41 in.; and the remainder of the soil was chalk rubble to rock bottom, of much the same appearance as that on the other sides. In this excavation we only got two roughly worked flints and two small pieces of Bronze Age pottery, both about 30 in. from the surface.

Excavation on the remaining east side gave the usual débris and chips; and at 15 in. below the surface we got seven small pieces of Romano-British pottery and a small fragment of Samian, also seven roughly worked flints: lower down, at 23 in. from the surface, we found two sarsen hammer-stones. Below this, and chiefly under the curve of the stone, were six packing blocks of sarsen; three of them at 27 in. below the surface, and the others at 37 in., 39 in., and 50 in., distributed along the under side of the curve in chalk rubble. This completed the excavation of no. 7 stone (fig. 3).

We began work upon stone no. 6 by carrying an excavation along its north face down to the foot in order to ascertain the shape of the buried portion, which we found came to a pointed end at 4 ft. 6 in. from the ground level. Its east and west sides curved fairly equally to the axial line, the eastern curve being convex and the western concave. This excavation yielded little but a sixpence of Elizabeth at 25 in. Foreign stone chips were greatly in excess of sarsen (131 to 18). There were a few small pieces of Romano-British pottery at 15 in. below the surface, and there were no packing blocks, only chalk rubble all the way down.

The excavation on the south side was very different. In our upper layer from 12 in. to 15 in. below the surface were 2 pieces of Chilmark oolite (ragstone) about 5 in. or 6 in. wide, 14 roughly worked flints, 2 small pieces of Bronze Age pottery, 6 of Romano-British ware, and an oyster shell. At 18 in. below the surface we got a small sarsen hammer-stone. At 23 in. were two similar hammer-stones and one made of foreign stone. At 30 in. we came to packing stones; three of them against the upright stone, two of which were braced from behind by large slabs of Chilmark ragstone set on end and at right angles to them. There were also two more ragstone slabs to the west of these, with edges towards stone no. 6, which had receded a little from them. These extended along nearly the entire front and were set in a mass of extremely hard earthy chalk, like concrete, extending down nearly to the base of the stone, around which was a mass of burnt wood ashes in fine earth (fig. 4).

We next investigated the east side of stone no. 6, and found the

interval between it and the side of the hole was narrow and filled with chalk rubble all the way down. In the upper layer we got

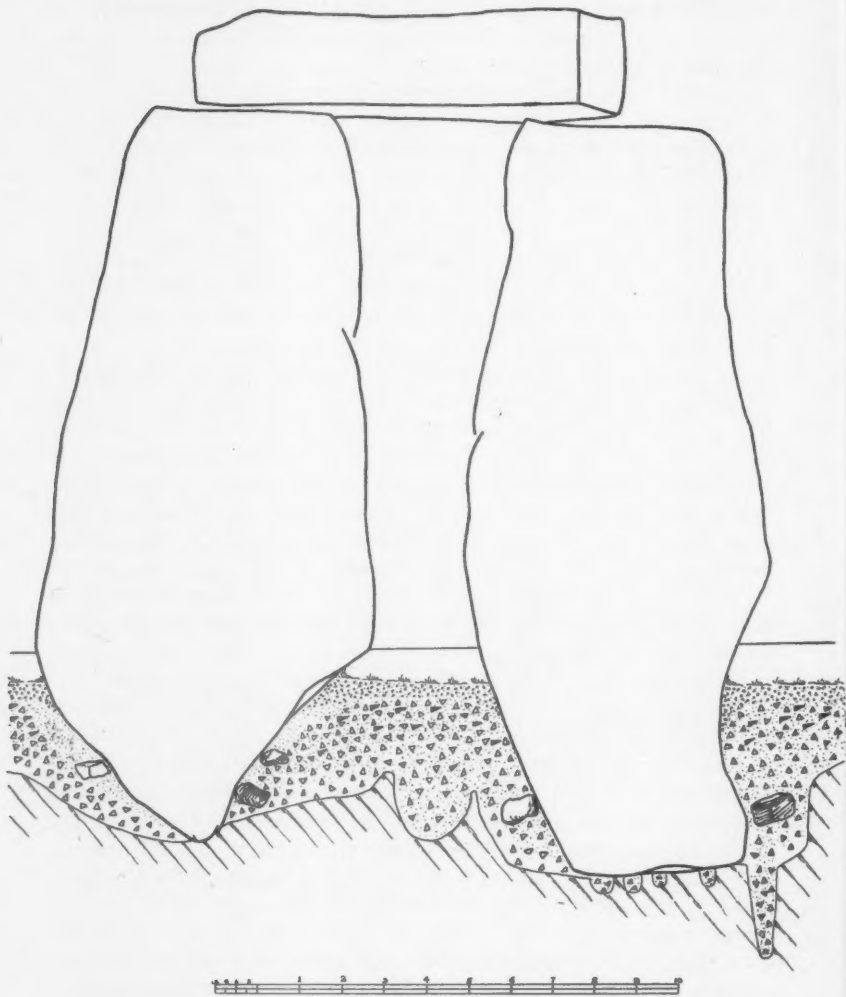


FIG. 3. Section through stones 6 and 7 after excavation, looking east :  
post hole on right.

three small pieces of Romano-British pottery, and lower, at 27 in., was a sarsen implement, and still lower, at 3 ft. from the surface,

were three blocks of packing stone tightly wedged with rubble between the stone and chalk rock. One of the blocks was a very large flint, the other two sarsen; and they extended north to south under the curved bottom.

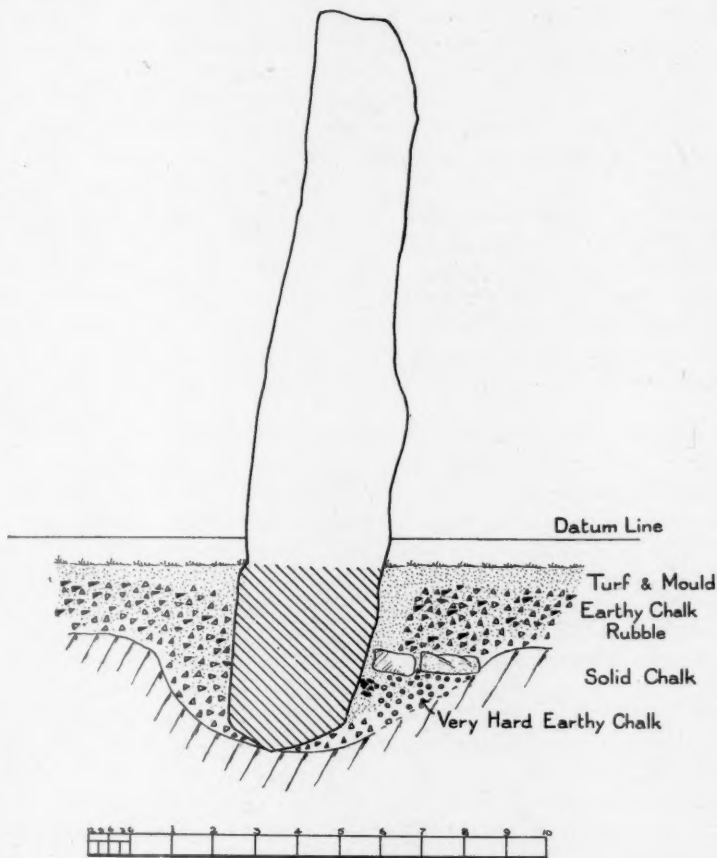
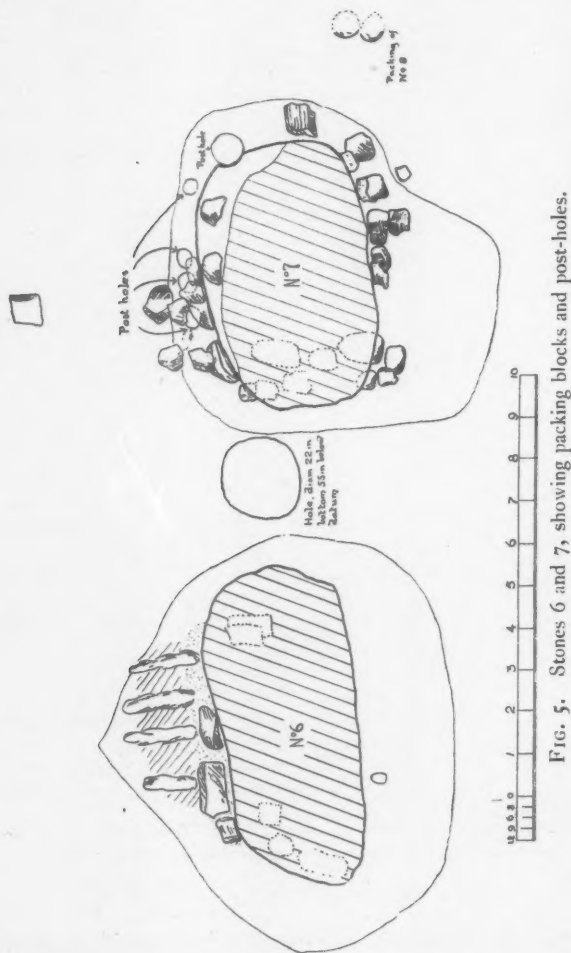


FIG. 4. Section through stone 6, looking NE.

Our last excavation of stone no. 6 on its west side was very much the same as that on the east, except that there were only two packing blocks, one at 26 in. below the surface and the other immediately under it, at 36 in. In the upper soil was one piece of Romano-British pottery and four roughly worked flints. The little soil remaining between the two stones was removed,

but did not reveal much of importance. On the top was a long baulk of rotted timber, a portion of which we had already met with on the north side. Chalk rock was found rising between the stones at 3 ft. from the surface, and in it midway between the



stones was a bowl-shaped cavity, which might have been made when originally erecting the stones, or be merely a result of modern propping (fig. 5).

Some of the areas excavated within our frame, apart from those

around the stones, are worthy of mention. On the south side of no. 7 there appeared to be an incline towards the stone, cut in chalk rock, intended no doubt for moving the stone down to its site for erection; and it is possible we may have the same arrangement in front of no. 6. With this exception the chalk rubble was more or less at its normal level over the solid. The area within our frame close to the north side was remarkable for the great quantity of foreign stone chips in it, especially the north-east corner, where an area 10 ft. by 5 ft. produced 700 of them to only 85 of sarsen; and an area a little west of it yielded 182 of them to 2 of sarsen, perhaps the trimmings of no. 33 of the inner circle which was close at hand.

The shallow area along the south side of the frame contained a number of objects of the Romano-British period, and produced 92 sherds of that date, an iron awl, a small long hammer-head of iron resembling those used by jewellers or clockmakers at the present day, a turned bronze ring, part of a shale bangle, and part of an iron knife and of a sickle: these two, although doubtful, resemble those found in British villages of the Roman period.

When our excavations were completed steps were taken to secure the stones permanently. The jacks had already been placed under the girders, but before they could be used it was necessary to prevent the stones slipping down in their cradles, so two steel ropes were passed under each stone and secured by eye-bolts to the lowest timbers. The stones were then practically slung upon the girders, the steel slings taking the weight (pl. IV). First of all it was necessary to make a firm bed to sustain the weight of the stones, as it was found that the chalk rock below them was very loose as a result of their gradual displacement.

Whilst the stones were held on the jacks the crumbled chalk was removed and replaced by a 3 ft. bed of reinforced concrete up to the original level, carefully calculated previously. Sufficient time having been given for the concrete to harden, the stones were lowered to it, and then came the most important and tedious part of all, namely, to get the stones into their correct positions. The lintel was slung up and lowered upon them. So carefully had all measurements been made that the lintel needed very little adjustment. A quantity of reinforced concrete was placed on all sides of the stones in a long and broad continuous trench and brought nearly to ground-level, allowing sufficient depth for turf and a bed of humus below it. When all was set firm, the lintel was again raised so that the dowels could receive leaden caps, which had been cast in plaster moulds.

The stones were then stripped of their timber, and the grass is already green around them. They have no appearance of repair, and are so natural that visitors frequently ask to be shown the stones that have been dealt with, as they cannot find them.

#### THE AUBREY HOLES

We are indebted to Bodley's Librarian for allowing us to examine the Plan of Stonehenge made by Aubrey in 1666 which forms part of the *Monumenta Britannica* preserved in the Bodleian Library. Aubrey mentions and marks upon his plan certain depressions, or cavities, at intervals within the circular earthwork. None of them was visible to us, but with a steel bar we searched for and found one, and subsequently more, all apparently at regular intervals round the earthwork. It occurred to us that there might be intermediate cavities, and excavation showed them to be at regular intervals of 16 ft., with the exception of two on the south-east side, which are a little closer together. To these we have given the name of 'Aubrey Holes' to distinguish them from others that may hereafter be found, and as a compliment to our respected pioneer who left such a useful record.

We have excavated a series of these holes from stone no. 80 (called the Slaughter Stone) round by the east to one on the south-west, where we stopped, deciding to gain experience before completing the circle. The holes so far excavated are twenty-three in number, but the series in the semicircle is not complete, as there is an intervening barrow on the south; so we left out four holes until we can give attention to the barrow. Unfortunately it has been opened before; and to distinguish the disturbed from the undisturbed portion it will have to be very leisurely and carefully worked, for it is very important, and may help us to arrive at the relative ages of barrow, bank, and holes, and settle the order of succession.

The holes vary very little in size and shape: the biggest is 3 ft. 5 in. deep, its maximum diameter 5 ft. 3 in., and the minimum 4 ft. 6 in. The smallest is 2 ft. deep, maximum diameter 2 ft. 6 in., and minimum 2 ft. 5 in. They are as a rule sharp and regular cuttings in the chalk, and are all more or less circular. Many have the edge of the chalk crater shorn away, or crushed down, on the side towards the standing stones of Stonehenge, this being apparently due either to the insertion or withdrawal of a stone, probably the latter. From their appearance and regularity there can be little doubt that they once held small

upright stones ; for, in two cases at least, a portion of the excavated chalk appears to have been returned, as if the hole had been too deeply dug to suit the intended height of the stone. This returned rubble was extremely hard and compacted, as if a very heavy weight had rested upon it for a long time. With the exception of four holes, all bore evidence of cremated human remains having been deposited in them, and at least three showed signs that actual cremation had been carried out in them.

Among the more interesting may be mentioned :

No. 21. Depth, 3 ft. 1 in. Maximum diameter, 5 ft. 5 in. Minimum diameter, 5 ft. 2 in. It contained 51 sarsen fragments,

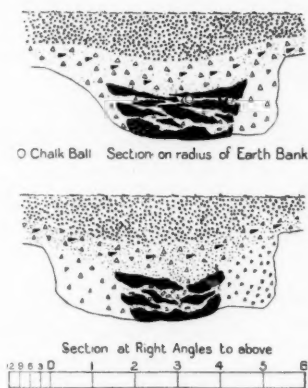


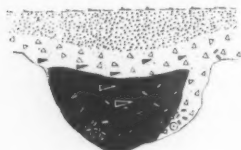
FIG. 6. Aubrey hole 21.

one being pitted, 61 fragments of foreign stone, 71 of hammer-stone sarsen, 1 piece of Bronze Age pottery, and 4 of Romano-British pottery. All these occurred about 20 in. below ground-level. After that a ball (hand-made) of chalk, 10 pieces of unburnt animal bone, and a bone pin in three pieces, burnt, at 2 ft. 3 in. A large cremation, amongst much wood ash dispersed in earthy rubble. This was first met with at 2 ft. below ground-level and continued to the bottom of the hole. Much of the rubble was burnt red. The hole had a sloping inner side (the side farthest from the rampart). At the top of this slope was a small bowl-shaped recess containing cremated bones. Presuming that the sloping side was crushed by the withdrawal of the stone, the cremated remains must have been deposited afterwards. The north-west side near the rampart was covered with finely crushed chalk rubble, hardened as if by great pressure (fig. 6).

No. 16. Depth, 3 ft. 3 in. Maximum diameter, 4 ft. Minimum diameter, 3 ft. 7 in. Contained 38 fragments of sarsen (one a fairly well-shaped hammer), 30 of foreign stone, 5 pieces of Romano-British pottery, a piece of foreign stone (small, rather flat, showing signs of use by rubbing), 3 rough flints, 6 flint flakes, and a flint fabricator at 34 in. below ground-level.

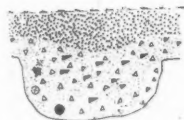
The hole contained a great deal of wood ash with cremated bones in it. This began at 19 in. below ground-level and continued to the bottom. The side of the hole had a layer of white chalk rubble in which was a fabricator, 5 in. from the bottom (fig. 7).

No. 13. Depth, 2 ft. 7 in. Maximum diameter, 3 ft. 7 in. Minimum diameter, 3 ft. 5 in. Contained 28 sarsen fragments, 34 of sarsen hammer-stone down to 25 in. below ground-level; below this 1 large animal bone at 28 in., a bone pin  $6\frac{1}{2}$  in. long at 18 in., and a flint fabricator at 22 in.



○ Flint Fabricator

FIG. 7. Aubrey hole 16:  
scale as fig. 6.



X Bone Pin ○ Flint Fabricator  
● Animal Bone

FIG. 8. Aubrey hole 13:  
scale as fig. 6.

A few cremated bones were met with just below the humus at 10 in. Wood ash was met with at 24 in. on the inner side of the hole and continued in a slanting direction down and across to the other side. Amongst the wood ash were cremated bones. There was chalk rubble on the inner side *under* the burnt wood, and a certain amount, as usually found, on the side nearest the rampart (fig. 8).

No. 3. Depth, 2 ft. 6 in. Maximum diameter, 3 ft. 2 in. Minimum diameter, 3 ft. 4 in. In this some of the excavated chalk had been returned to the hole, presumably to raise the stone to the desired height. The same peculiarity was met with in two other instances. In this there was a thickness of 8 in. over the chalk rock much compressed. The hole had in it a cremation dispersed amongst the earthy rubble which filled it (fig. 9).

No. 5 hole had a similar layer, which was 5 in. thick. This hole also had a cremation over the hard mass, from 10 in. to 27 in. below the surface (fig. 10).

No. 19 was interesting because, after the upper soil was passed, we came upon a mass of white flint flakes at 32 in. discarded by

an implement maker who had been working on the spot and who must have demolished a large block of flint to make thin and delicate implements. That they all belonged to the same block was evident, not only from the colour and material, but because some of them fitted together; and they also clearly show the marks made when they were struck off (fig. 11).

Sarsen and other stone fragments were found in nearly all cases on the upper level, but rarely below 20 in., and they usually decreased in number downwards. It is a curious fact that in almost all the holes there was a little white chalk rubble on the bottom and against the side nearest the rampart. The reason may possibly be that the stone was dragged out on the opposite side, leaving this deposit undisturbed. It might perhaps be connected with the making of the rampart, but these questions we hope the excavation of the barrow may solve.

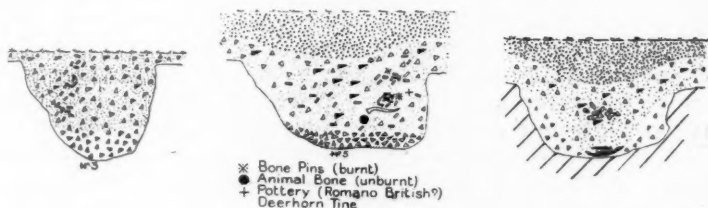


FIG. 9. Aubrey hole 3: scale as fig. 6.

FIG. 10. Aubrey hole 5: scale as fig. 6.

FIG. 11. Aubrey hole 19: scale as fig. 6.

#### DITCH AND RAMPART

We made a small investigation of the ditch and rampart, by cutting a trench 3 ft. wide from one of the Aubrey holes through the rampart till we met the edge of the ditch. We found the vallum to be a very low one of chalk and rubble, only 2 ft. 6 in. high from its crest to the chalk rock. Just under the humus were three sarsen chips, ten of foreign stone, and two small pieces of Romano-British pottery. These were all that were found.

We continued the trench 9 ft. farther to the opposite side of the ditch, meeting the solid chalk beyond. We excavated this part of the ditch and found it 39 in. deep, measured from the centre of the ditch to ground-level. At 12 in. from the top we found five sarsen chips, thirty-two of foreign stone, three rough flints, one flint flake, a small piece of Bronze Age pottery, and two of Romano-British, also a strap ornament of bronze and a bronze bead, also of the Roman period.

In the next layer down to 22 in. were two sarsen chips, six of foreign stone, seven of bone, three pieces of Romano-British pottery, one flint flake, and a Lee-Enfield rifle cartridge case at 18 in. below ground-level. The next layer down to 30 in. contained five flint flakes and part of a jawbone of a deer.

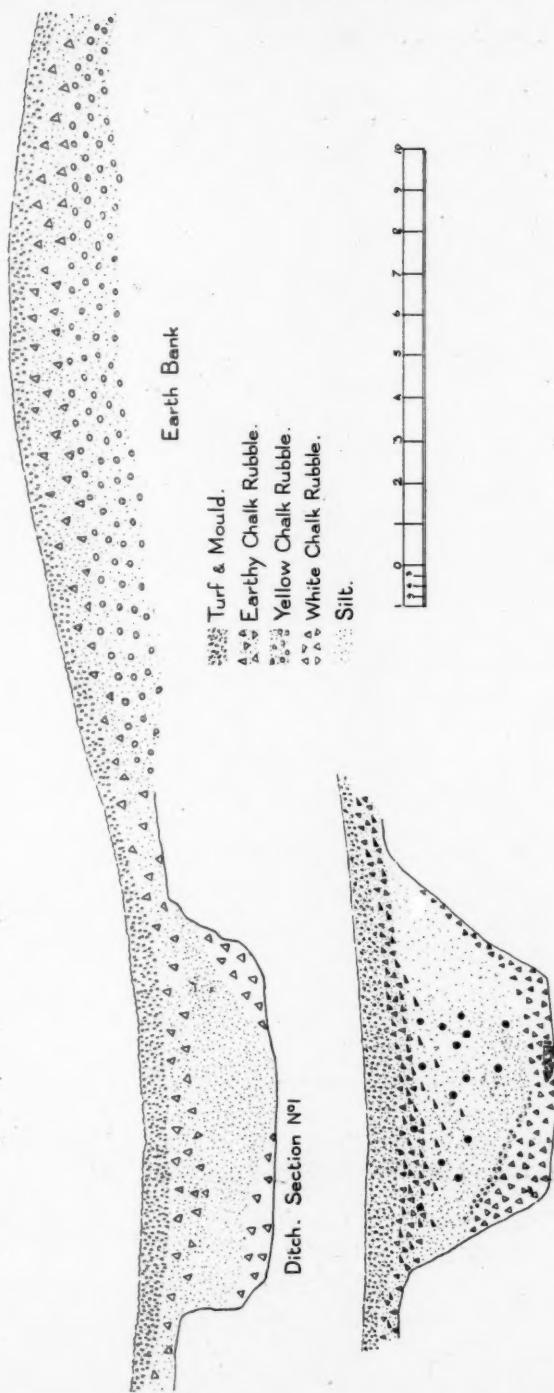
The lowest layer yielded 14 roughly worked flints, 26 flint flakes, and a fragment of deer antler.

Subsequently we carried the excavation of the ditch farther west in an area 9 ft. by 12 ft. Here we found that the depth of the ditch which had been previously 39 in. increased on the west to 54 in., and probably future excavation may show its course to be similarly irregular. We found no object of interest beyond a cremation in a bowl-shaped cavity in the solid chalk at the bottom on the side below the vallum. Stone chips were present in the upper layers, but disappeared below 25 in., and there were a few rough flints and a deer bone at the lowest level. The edges of the ditch are perpendicular from the humus through hard chalk to about 24 in. down, where the chalk takes a curve to the bottom, which is roughly flat. From this it rises again in a corresponding curve and meets a corresponding perpendicular chalk bank, from the top of which the vallum begins (fig. 12).

Aubrey's plan does not show the Slaughter Stone lying in its present position, but shows two large upright stones inside the vallum and one outside. These no longer exist, and we have not yet been able to discover their sites as indicated by him. We have only lately been examining this spot, so perhaps a later search may reveal them.

In dealing with the Slaughter Stone we already knew that Cunnington had examined it in 1801, so we thought it best to remove his spoil from around it to get further information. We found a cavity for about 3 ft. or 4 ft. around the stone, evidently his work, but one could see that the stone had been buried earlier in a pit very roughly dug in the solid chalk and just deep enough to allow the soil to cover it at ground-level. Perhaps the intention had been to bury it deeper, but the hole was not made long enough, consequently the top and bottom rest on sloping chalk and cause a void of about 10 in. under it. This void was filled with dirty rubble containing much modern rubbish, evidently returned by Cunnington. There could be little doubt about this, as we found a bottle of port wine left under the stone, presumably by him out of consideration for future excavators. The seal was intact, but the cork had decayed and let out nearly all of the contents.

I should have mentioned that those who dug the pit cut into



Showing  $\frac{1}{2}$  Bluestones  $\frac{1}{2}$  Animal Bones.  
Cremation at bottom.

FIG. 12. Sections through Rampart and Ditch: No. 1 east end, No. 2 west end of ditch.

an Aubrey hole on the west close to the stone, but fortunately three parts escaped and it is still well defined. It was full of Cunnington's spoil, so he certainly emptied it, and might have been responsible for the damaged side.

Measurements having been taken, we examined the bank west of the stone, but found hardly any of Cunnington's débris upon it. It was composed of loose rubble, and we were surprised to find it descending well below ground-level: the result being that we came upon a very large hole roughly 10 ft. in diameter by 6½ ft. deep which we gradually excavated. We found a coin of Claudius Gothicus in the upper layer, but nothing interesting until we reached the bottom, where two deer-horn picks were resting against the curved side (fig. 13).

There was a large slab of stone standing on end near the middle, resting on the bottom. The material was very soft sarsen which crumbled if pinched between thumb and finger. There can be no doubt that a large stone once stood in the hole, but when it was taken out, and why, cannot be stated. The impressions of irregularities on the stone's base are very noticeable, both on the sides of the hole and upon some firmly compacted rubble on the bottom, which have rather a resemblance to an impression of the base of the Slaughter Stone, but I cannot state definitely if this is so, and the movement of taking the stone out must have distorted some of the impressions. The slab at the bottom appears to be too perishable for a standing stone and may be a piece flaked off a packing block. This is as far as our operations have taken us up to the present time.

I should like to say something about the foreign stones. Possibly they once stood in the Aubrey holes, for if the number of the holes proves to be what we expect there would have been just about sufficient of them to make the inner circle and horse-shoe. The Aubrey circle was presumably earlier than Stonehenge, perhaps of the Avebury period, and would have been of undressed stones which were dressed on removal to their present position.

This of course does not bring us any nearer their place of origin, but Mr. Tapp has very kindly undertaken to enlist the services of the Geological Survey on this point.

In conclusion I should like to express my thanks to my friend and colleague Mr. R. S. Newall for the great help he has given throughout the work. He has made all the drawings, and the excavation of the Aubrey holes was all his labour. Also I should like to record my thanks to all the members of the Office of Works staff for their constant and courteous assistance.

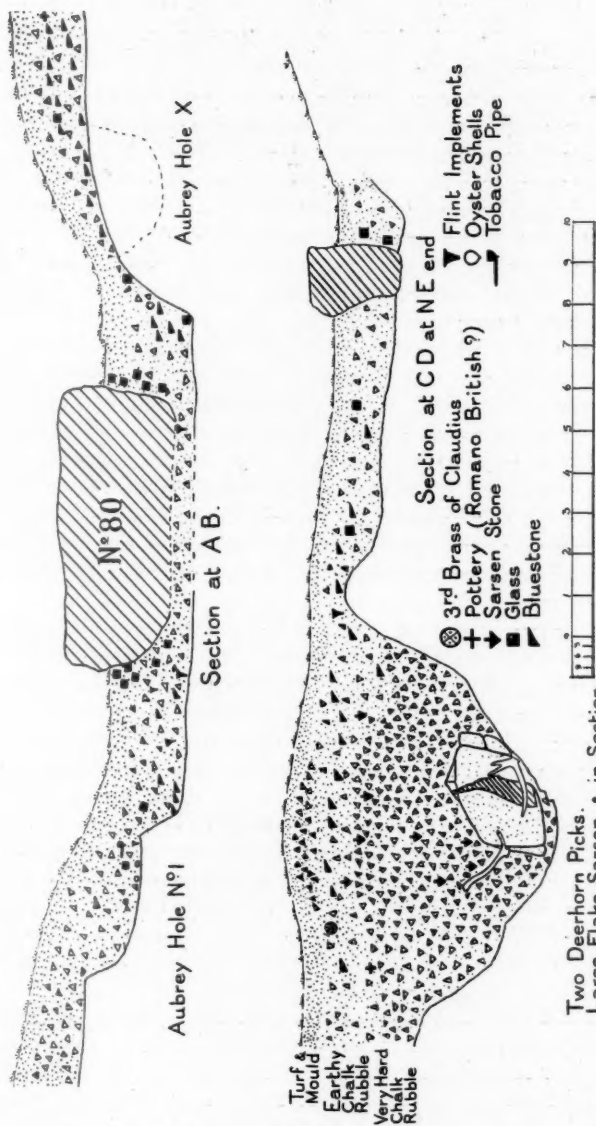


FIG. 13. Sections through Slaughter Stone: Lower section shows large hole which may have once contained the Slaughter Stone.

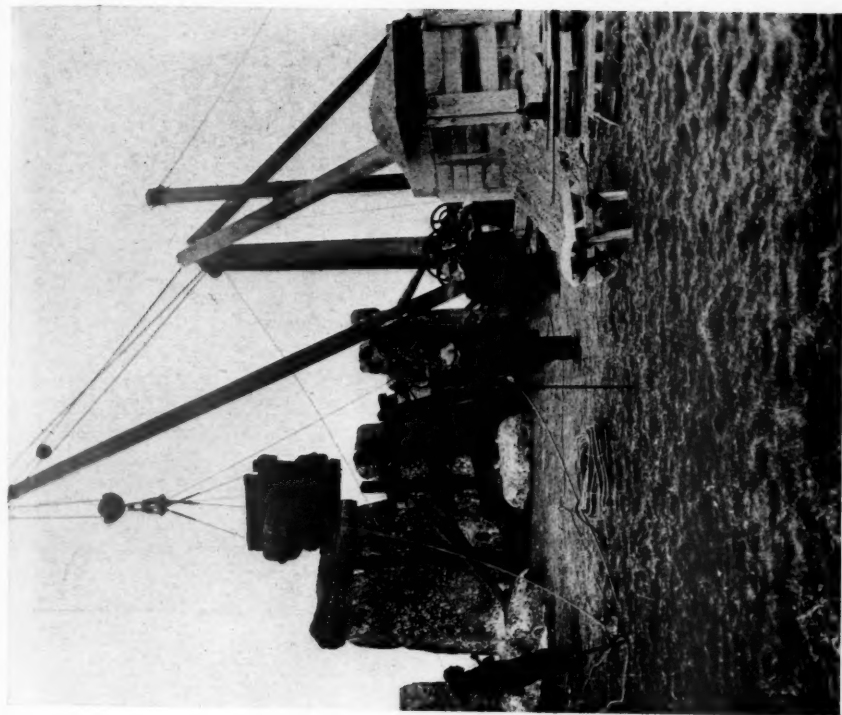
*Appendix : Note on the method adopted for setting leaning stones upright*  
By C. R. PEERS, M.A., Secretary

The problem to be faced in securing the leaning stone numbered 7 on the plan was as follows. The stones of the outer circle, as first set up, were retained, approximately, in their relative places by the ring of lintels which they carried; but when this ring was broken the pressure of soil round the feet of the stones was the only obstacle to deflexion, whether inward, outward, or sideways. When it is remembered that the average depth of the feet of the stones below ground surface is only 4 ft. 6 in., while the height above ground is 15 ft., and when the tapering shape of the feet is also taken into account, it will be seen that the probability of some movement is great. In judging, therefore, of the original position of a stone, its present position can give no absolute guide, and an adjustment which brings the centre of gravity as nearly as possible to the line of the vertical axis, and at the same time satisfies the fitting of the mortises on the lintels to the tenons on the uprights, where these exist, must be considered the best that can be obtained. Such an adjustment can of course only be made on a system by which the smallest movements of the stone can be controlled, and the method now to be described was devised with that intention.

A timber framing of 8 in. by 8 in. pitch-pine baulks, vertical and horizontal, was placed round the stone, the horizontal timbers claspings the vertical timbers, and held together by long 1 in. steel bolts. For fitting to the irregular faces of the stone small pieces of wood, secured by folding wedges, were used, and felt was packed between the stone and the timber to prevent injury to the surface of the stone.

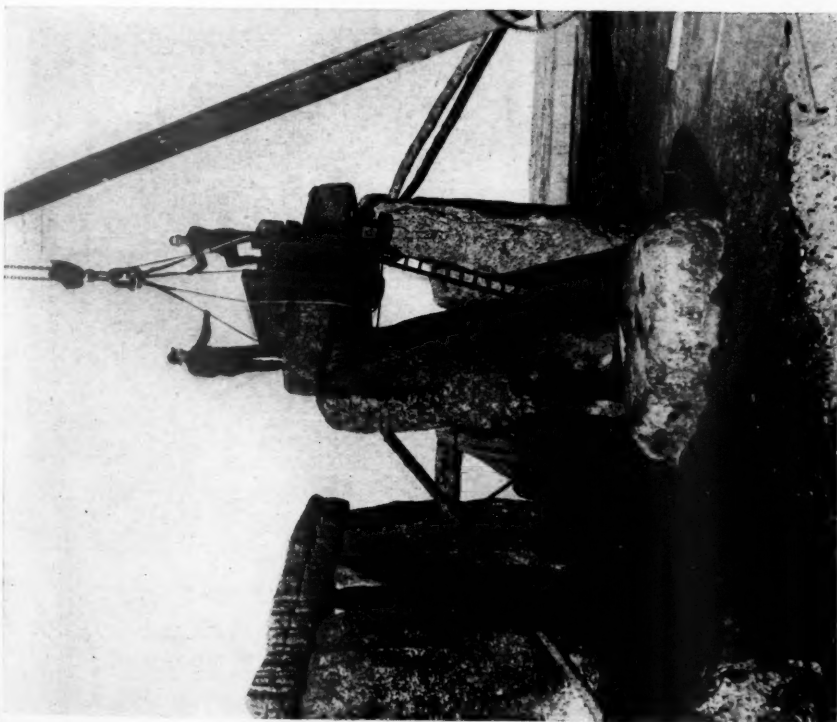
To the lower part of this framing were secured two steel joists, 14 in. by 6 in. by 20 ft. long, one on either side, and placed as nearly as possible at right angles to the axis of the stone. From the ends of the joists raking timbers, fixed to angle cleats, ran at an angle of about 45° to the top of the framing, in order to act as struts, and to convey the movement of the joists to the tops of the stones.

Under the ends of the joists were set travelling screw-jacks of 10-tons capacity, bedded on steel plates laid on the solid chalk. By raising or lowering any or all of these four jacks the angle of the upright stone could be altered in any direction, making minute adjustment possible, but for extra security, in case of any unforeseen slip, wire ropes were attached to the top of the framing to act as guys in different directions, and other ropes, secured to



LINTEL BEING LOWERED

*Photos. H.M. Office of Works.*



LINTEL READY FOR LIFTING



STRAIGHTENING STONE No. 6 BY MEANS OF JACKS

*Photos. H.M. Office of Works.*

the lower timbers of the framing, were passed under the foot of the stone. The straightening operation began by raising the joist ends  $\frac{1}{2}$  in. on the side toward which the stone leaned, and lowering  $\frac{1}{2}$  in. on the other side; this was continued in 1 in. movements till the stone was upright, careful inspections being made between each movement to see that lashings, packings, etc., were not displaced.

The total southward movement at the head of the stone was 2 ft. 6 in., which was accomplished by raising the jacks at the north ends of the joists  $14\frac{1}{2}$  in. and  $14\frac{3}{4}$  in., and lowering those at the south ends  $14\frac{1}{2}$  in. and  $10\frac{3}{4}$  in. respectively.

No movement or inclination to slip was observed during the raising of the stone.

#### DISCUSSION

Dr. H. H. THOMAS, Petrographer to H.M. Geological Survey, said that he was well acquainted with small specimens and sections of the Stonehenge foreign stones, and, through the kindness of Colonel Hawley and Mr. Tapp, he had now had ample opportunity of studying the stones themselves. He had not altogether been unprepared to find that, with a few exceptions, all the 'bluestones' were linked together by a common character, that made it practically certain that they had all been derived from the same area, and possibly from the same rock-mass. The bluestones are mainly diabases that are remarkable for the presence of white or pinkish irregularly bounded felspathic spots that vary from the diameter of a pea to twice or three times that dimension. The speaker pointed out that the occurrence of such felspathic spots was highly characteristic of, and as far as he was aware confined to, the diabase sills of the Prescelly Mountains of Pembrokeshire. Many such general localities as Devon, Cornwall, Wales, and Cumberland had been suggested by previous writers as producing similar rocks, but now he was glad to be able for the first time to point to a locality where there existed a rock absolutely identical with that of which the majority of the bluestones was composed; and it occurred both *in situ* and as boulders comparable in size to the Stonehenge monoliths.

Another highly characteristic rock of which there were two stones at Stonehenge, and of which an abundance of chips had been unearthed in recent excavations, was a beautifully banded spherulitic rhyolite. There should be no difficulty in identifying its source, and the speaker hoped shortly to be able to do so.

With regard to the majority of the bluestones, he felt certain that their ultimate source lay in the Prescelly Mountains and in the boulder-strewn area to the immediate south-east. All possible proximate sources, however, must of course be investigated, but he felt that the idea of Pembrokeshire boulders being carefully selected from practically all other rocks, and stranded on the high ground of Salisbury Plain by glacial action, was contrary to all sound geological

reasoning; and that such an assemblage of stones, of which so many were of the same type, pointed to human selection and conveyance from a distance.

He wished to point out that foreign boulders of large dimensions were not of infrequent occurrence in the low coastal region between Selsey Bill and the Isle of Purbeck, but, as far as they had been examined by the speaker, they had all proved to belong to types unrepresented among the stones of Stonehenge. He intended, however, further to investigate these boulders left presumably by floating ice, with the object of determining whether any were like those erected at Stonehenge. If it should be proved ultimately that Stonehenge types were represented, then the south coastal region would constitute a possible proximate source, but failing that there seemed to him no alternative but to go to the ultimate Pembrokeshire source for the material in question.

His investigations were as yet only in their initial stages, and he expressed the hope that he might be able to throw still more light on the sources of the foreign stones that had always been the subject of so much speculation.

Mr. DALE quoted Professor Judd's opinion of 1901 that the bluestones were glacial boulders left on Salisbury Plain; and on one of the fragments exhibited he detected striae. Much had been collected for building purposes, and human transport from Wales would be a difficult matter.

Rev. G. H. ENGLEHEART said the expert opinions left the meeting in a dilemma. The bluestones were declared not to be glacial, and even if they had been brought from Wales, it was difficult to believe that they were dressed only on arrival at Stonehenge. Transport of such an unnecessary weight argued lack of intelligence. In any case they were boulders and not quarried stones: one piece was striated, and he thought they were all of glacial origin.

Sir ARTHUR EVANS congratulated Colonel Hawley and the Inspector of Ancient Monuments on the first season's work. The discovery of the holes indicated on Aubrey's plan was a distinct advance; and he was ready to believe that a circle of small stones once existed inside the earth ring and had been subsequently removed, perhaps to the centre of the monument. The cremations would by general consent be placed in the later Bronze Age, and he was confirmed in the belief that the later history of Stonehenge was connected with the cult of the dead, its earlier elements being late neolithic. Recent discoveries tended to show that construction and reconstruction continued over a long period, and perhaps extended into the age of metal. Professor Petrie's metrological studies had shown that the outer circle was carefully drawn but did not have the same centre as the bluestones; and three periods of construction had been deduced.

Professor FLINDERS PETRIE argued that the difference of centres indicated laying out at different times; and transport from Wales would imply unified government or tribal warfare. The latter seemed

more probable, and the stones were perhaps a form of war indemnity. He hoped that special measures would be taken to secure everything found in excavating the Aubrey holes.

Mr. REGINALD SMITH drew attention to the absence of cinerary urns, and argued that the cremated bones must have been deposited in the Aubrey holes immediately after the stones were taken out; otherwise the sides would have crumbled and the cavities been silted up. Cremation was characteristic of the later Bronze Age, though not unknown in Yorkshire long barrows; and there was nothing to date the deposits, which might represent human sacrifices on some solemn occasion. The patinated flints looked earlier than the monument, and differed from the pounders used for dressing the megaliths. In a few inches of soil, which had been disturbed more than once, finds of all periods might be expected, but it was curious that Roman pottery was common at various levels. The work had, however, only just begun, and it was inadvisable to draw conclusions from such scanty evidence.

The PRESIDENT felt that the discussion would bear fruit in the next report, and took much interest in the novelties already discovered, though any deductions from them would be premature. How the bluestones reached the site was likely to remain an unsolved problem, but thanks were due to Mr. Tapp for securing an official account of their nature and origin. Dr. Thomas's report was an important addition to the controversy. Colonel Hawley seemed to forget his years at Stonehenge; and in thanking him for his report the Society would wish him and his colleagues all success in the coming season.

## *The recent discovery of silver at Traprain Law*

By A. O. CURLE, F.S.A., Local Secretary for Scotland

IN the early summer of 1919 a memorable discovery was made on Traprain Law in the county of Haddington, a hill on the East Lothian estate of the Rt. Hon. A. J. Balfour. From the natural advantages for defence which the hill presents, as well as from the plentiful surface indications of occupation, the Society of Antiquaries of Scotland had concluded that the site was well worth excavating, and had begun work on it in the summer of 1914. This was continued during the following summer till operations were suspended by the war. One of the results of these two seasons' exploration was the revelation that beneath the turf were four well-defined floor-levels referable to periods of occupation dating from the first to the fourth, or commencement of the fifth, century of our era. In May last year the latest of these floor-levels had been removed, and the second was just being loosened with the point of the pick when a remarkable hoard of Roman silver plate was discovered buried in a hole some two feet in diameter and two feet in depth. No evidence remained of any sack or box in which it might have been contained, but the pieces lay jumbled in a mass as if they had been thrown in disorder into the hole. Few of them resembled silver—to such an extent had the treasure been affected by its long burial in the soil—and a dull leaden hue with a tinge of purple best describes its colour. Its condition otherwise bore eloquent testimony to the treatment it had received at the hands of its owners previous to its concealment.

It was a strange assortment of plate (fig. 1). A few pieces—a small triangular bowl with a beaded edge (fig. 2) and one or two small bowls of ordinary form with broad rims and similar edging—were practically complete, but most of the objects were crushed, folded, and disfigured in a ruthless fashion. Odd portions predominated, many being folded up into packets, and bearing plentiful testimony to the free application of the axe and the hammer. A scrutiny of the pieces where decoration was exposed, revealed a mingling of pagan and Christian symbolism, and suggested the ingathering of the loot from diverse sources. A small strainer showed the *Chi-Rho* monogram formed by the perforations in the bottom of it, while similarly formed around the side ran the legend 'Iesus Christus'. Such an object there seems little doubt was a *colatorium*,

used in some early church for straining the communion wine. Two halves of a vase or flagon in high relief bore a series of scenes from Scripture—two from the Old Testament, 'The Fall of Man' and 'Moses striking the Rock', and two from the New, 'The Adoration of the Magi' (fig. 3) and 'The Betrayal'. Here,



FIG. 1. The Treasure in the condition in which it was discovered.

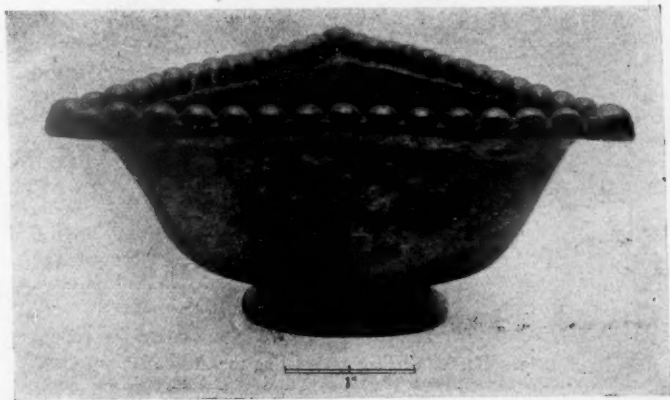


FIG. 2. Small triangular Bowl with beaded edge.

too, we have probably a church vessel. Paganism was represented by a figure of Pan, on one half of a small flagon, also by Venus, Hercules, and Amphitrite. The bulk of the pieces, however, bore no devices assigning them to either category. There are no less than eight spoons, four of which are shown in fig. 4. The date of the deposit was not difficult to fix approximately.

Previously the latest occupation had been placed by coin evidence about the beginning of the fifth century, and the coins found with the hoard bore this out. They were four in number, one each of Valens and of Valentinian II, and two of Honorius, A.D. 395-423. These coins were in such a condition as showed that they could not have been long in circulation. Though all pieces of the plate are probably not of the same date of manufacture, the greater part shows features of style indicative



FIG. 3. Portion of Flagon depicting the Adoration.

of the fourth century of our era. The prevailing motif is an edging of beads, ranging in size on different specimens from a bead the size of a pea to one the size of a marble. Such an edging was much in vogue in the Roman Empire in the fourth century. In the pagan cemeteries at Vermand and Abbeville, which are believed to have been closed about A.D. 395, small bowls identical in form with those from Traprain Law, but in bronze, have been found, and others have come to light elsewhere in Western Europe. But the style is not confined to such bowls, and

will be found on other articles of metal of the period. The weight of the treasure is some 770 ounces.

After being carefully annealed to restore its pliancy, the folded

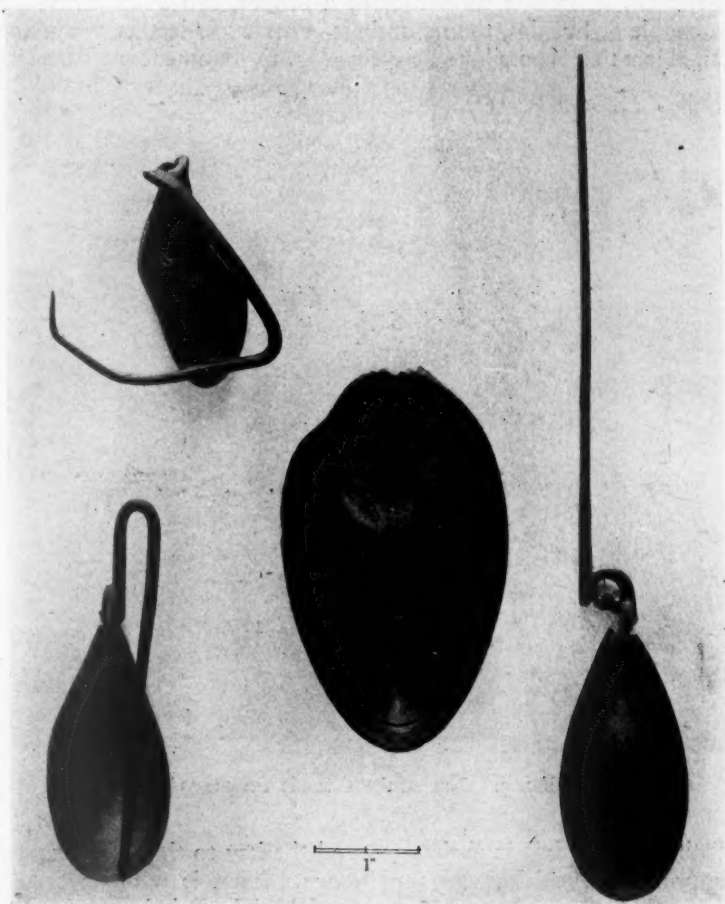


FIG 4. Spoons.

fragments and dishes have been opened out, and where possible related pieces have been brought together. The art displayed is without doubt that prevalent in the Roman Empire in the fourth century, with here and there strong evidence of Eastern influence.

Of Celtic influence, such as vessels produced in this country might have shown, there is not a trace. Further, as pointing to a Continental source for the plunder, there occurs among all the silver utensils and fragments of such things a small group of personal ornaments consisting of a brooch, two strap terminals, a couple of buckles, the mountings of a narrow leather strap, and an object that is possibly an ear-ring (fig. 5). Now these articles are

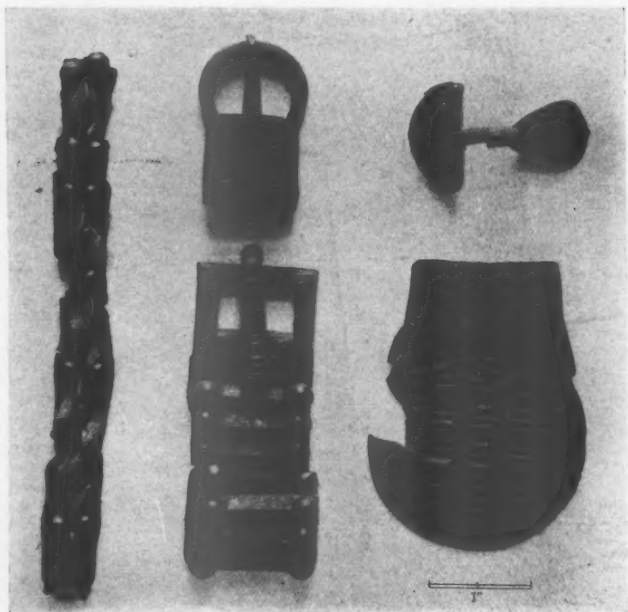


FIG. 5. Some of the Teutonic Ornaments.

distinctly Teutonic in their style, and the key to their provenance is probably furnished by the brooch. That is without doubt Visigothic. Such brooches are not found in Britain nor in the West, but examples are recorded from the Crimea and from Hungary. Two years after the sack of Rome in the year 410 the Visigoths under Ataulf wandered westward and settled in Gaul along the southern shores and by the littoral of the Bay of Biscay. At that time the Saxons were carrying on their piratical raids on the coast towns of western Gaul, harrying and plundering in ruthless fashion, careless of anything but booty. It is at least

a plausible theory that one or more bands of these sea-rovers joined in a foray into the region occupied by the Visigoths, sacked and burned church and homestead that lay in their tracks, and bore their booty off to sea. To such an extent do single halves or pieces thereof appear in the hoard that an equal distribution between two bands of the marauders is suggested. What was the further adventure of the spoil we cannot tell, beyond the fact that it was ultimately brought to the top of this Haddingtonshire hill. Scanty indeed as are the relics of the latest occupation, they do not suggest a Saxon connexion. One fact stands out clear. An imminent danger threatened the possessors of the silver treasure. The chance of escape encumbered with their wealth was too small to risk. Hastily it was thrust into the ground, and the owners passed to their fate leaving none to know the spot wherein their wealth lay buried.

*An imperfect Irish shrine recently purchased by  
the Royal Irish Academy*

By E. C. R. ARMSTRONG, F.S.A., Local Secretary for Ireland

THE Royal Irish Academy recently purchased from Mr. H. Naylor, a Dublin dealer, a portion of an Irish shrine together with two fragments supposed to have belonged to it. These had been obtained at the sale held at Killua, co. Westmeath, early in June 1920, having formed part of a large number of Irish antiquities collected by Sir Benjamin Chapman, fourth baronet.

No catalogue recording the localities or origin of the specimens appears to exist, and Mr. E. Crofton Rotheram, of Belview, Crossakeel, co. Meath, who helped Sir Montagu Chapman to arrange the collection many years ago, has informed me that few of the specimens were localized.

The history of the shrine portion therefore is at present unknown. It is uninscribed, so its dating must rest upon stylistic grounds.

As will be seen from the illustrations it is semicircular in shape, measures 5.2 in. in length, 2.3 in. in height, and 1.2 in. in breadth. At each side (plate V and fig. 1) is a pierced tube 0.7 in. in diameter, suggestive of handles, which would appear to have been used for suspending the reliquary on certain occasions round the neck of its

custodian. It may, however, be objected that the form of the tubes is hardly a practical one for handles, and their use as such is not insisted upon.

The shrine is made up of cast bronze plates, and is enriched with settings of amber. The front is gilt, and the design upon it is cut out of the bronze plate, but on the side to the observer's left can be seen the broken part of a gilded bronze plate, which appears, as there is a nail to fix it to the other side, to have been carried across and to have closed in the part at present open.

The principal feature of the decoration is a conventionalized male figure whose face is framed in a raised lozenge, the topmost point

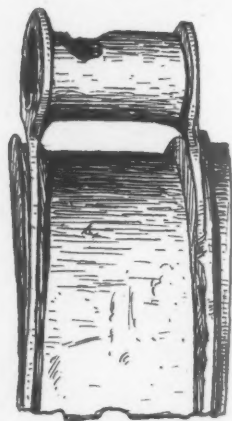


FIG 1. Side of Shrine to show handle. ( $\frac{1}{4}$ )



THE KILLUA SHRINE, FRONT AND BACK  
(SLIGHTLY UNDER NATURAL SIZE)

48.

of which projects 0.2 inches over the face ; the eyes are long, the mouth is placed directly below the nose ; a beard and hair are shown ; the ears are placed outside the lozenge. Possibly this framing was intended to indicate a hood with a pointed top ; but, if so, it is difficult to understand the ears being placed outside it. The arms are raised and the fingers clenched, apparently grasping the lower jaws of the confronting animals. The body is divided down the centre, and on each side it is ornamented with triangles placed base to base on either side of a beaded line, the background being shaded.

This figure does not resemble those to be seen on the shrine of St. Maodhóg, nor the later examples carved on the Irish high crosses. The figures on the shrine of St. Manchán are more akin to it, in that they have elongated eyes, but the faces of the St. Manchán figures are larger and narrower ; the nose is differently formed and in no case is the mouth placed directly below it.

At each side of the human figure is placed a conventionalized animal with a head recalling that of a crocodile, whose long turned-back mouth is opened and appears to be biting the ear of the figure. The two crocodile-like animals resemble each other in form, but differ in certain details. Their eyes are placed above the ending of the upper jaw. In each case the fore limb is returned on the body. The hind limb is well marked ; its upper portion begins with a spiral, while the lower part, showing two toes, is curved round the outside of the amber-centred disc. The bodies of the animals are ridged.

A human figure supported on each side by animals is an ancient and widely spread design.<sup>1</sup> A variant of this, in which animals gape with open jaws on each side of the figure, is not uncommon in Irish Christian art. In metal work it may be seen on the shrine of the Stowe Missal, where it occurs thrice, in one example being combined with a second pair of supporting animals.<sup>2</sup> The same duplicated form, with the lower animals replaced by human figures, is found on the Carndonagh cross, co. Donegal.<sup>3</sup> Salin<sup>4</sup> has figured examples of Scandinavian metal-work showing animal forms gaping at each side of a man's head.

A disc 1.3 inches in diameter, with a central setting containing a half-bead of amber with an attachment through the centre, is placed on each side of the body of the figure. From the setting radiate four arms making a cross. On the panel to the

<sup>1</sup> See Evans, *Journal of Hellenic Studies*, xxi, pp. 163-9.

<sup>2</sup> Warner, *Henry Bradshaw Society*, xxxii, plates III, IV, V.

<sup>3</sup> Crawford, *Journal of Royal Society of Antiquaries of Ireland*, xlv, p. 185.

<sup>4</sup> *Die altgermanische Thierornamentik*, figs. 394, 490.

observer's left the tops of all the arms are beaded ; in that on the right the top one is plain.

The spaces between the arms are filled with raised interlaced work. It may be noticed that in the upper left panel of the disc, to the observer's right, the band is divided in two by a ridge.

It will be seen that the details of the supposed handles of the shrine differ ; also that at the head of the figure to the observer's right is a ridged band which extends as far as the top of the animal's eye ; this is not repeated on the left.

The ornamentation of the back of the shrine, on which there is no trace of gilding, may now be described. Its circumference is decorated by a band of knot-work interlacing derived from a four-cord plait, placed over a hatched background. Below this is a raised cross having in the centre an amber half-bead inserted in a circular socket within a quatrefoil setting. The three complete limbs of the cross end in what are apparently meant for hands, though the circular form of the edge has caused the designer to make the thumb longer than the fingers. It is probable that the fourth limb also ended in a hand, for the line confining the design seems to have been carried across, and this would hardly have allowed space for any other form of termination.

In the two upper spaces between the arms of the cross are engraved two conventionalized animals similar in structure though differing in detail. Their general form and front and hind limbs can be easily detected. They may be compared with Salin's figure 565 a. The lower spaces were filled with a running design of whorls, the spandrils being ornamented with trefoils.

The two fragments obtained with the shrine, supposed to have formed part of it, consist of a damaged gilded bronze plaque (fig. 2) measuring 1.6 in. in length from the unbroken edges ; when complete it was apparently square. It is ornamented with a cross placed saltirewise, having at the centre and at each of the arms sockets set with half-beads of amber, of which only two remain. The spaces between the beaded arms of the cross are decorated with spirals of the same form as those on the front of the shrine which mark the junction of the animal's limbs.

The other fragment (fig. 2) is merely a socket, showing traces of gilding, set with a half-bead of amber having an attachment through its centre. I am unable to suggest a reconstruction of the missing portion of the shrine to include these fragments.

The shape of the shrine portion would suggest that it was that part of a bell-shrine which enclosed the handle of the bell. Comparison both in shape and decoration with the handle of the *Corp-Naomh* bell-shrine, though of considerably later date, is

inevitable. A consideration, however, might be urged against this if the two tubes are considered to have been handles. For had the lower part which enshrined the bell been in proportion, it would have been too heavy to have been suspended by the top. It may be remembered that the handles on the shrine of St. Patrick's bell are attached to the centre of the lower and heaviest part of the shrine.

Two bronze plates strongly riveted to the sides of the Killua shrine, and broken off where the portion ends, can be seen. These were evidently the attachments for the lower portion of the shrine.

The shape of the top of the shrine is so like the top of a bell-shrine that possibly it was made to enshrine a portion of a bell, the lower part of which was broken, thus requiring only a small case, whose weight would have allowed it to be lifted by the top, always supposing that the two tubes were handles.

The next point is the date to which the Killua shrine is to be assigned. Its ornamentation, omitting the human figure and the cross, falls into three classes—spiral, interlaced, and zoomorphic.

The spiral ornament is early in type, and on these grounds alone I should not consider the shrine to be later than the eighth century. The interlaced ornament is of a simple character not unlike that found in the Book of Durrow. The deciding point with regard to the zoomorphic ornament seems to be the occurrence of the spiral; for, according to Salin,<sup>1</sup> the two occur together first in the Book of Lindisfarne, which may be dated early in the eighth century. Zoomorphic combined with spiral ornament which can be dated early in the eighth century is also met with in North Europe, being a feature of Salin's 'Style III'.

It would therefore seem that the Killua shrine may be provisionally dated to the eighth century.

<sup>1</sup> *Op. cit.*, p. 357.



FIG. 2. Fragments supposed to have formed part of Shrine. ( $\frac{1}{2}$ )

## John Plummer, Master of the Children

By C. JOHNSON, M.A., F.S.A.

THE following document is of some interest as illustrating the history of the 'Children of the Chapel Royal', which is not yet worked out for the fourteenth and fifteenth centuries.<sup>1</sup>

John Plummer is mentioned as one of the clerks of the King's Chapel in 1441,<sup>2</sup> receiving a grant of £10 on the 12th April in that year. The grant of forty marks a year for the maintenance of the eight singing-boys, here mentioned, is dated 4th November 1444,<sup>3</sup> and from that date onwards it may be presumed that they ceased to draw their clothing from the great wardrobe. On 24th February 1445 Plummer was formally appointed their teacher and governor.<sup>4</sup> On 30th May 1446 the grant of forty marks, charged on the ulnager of Bristol, was renewed.<sup>5</sup> This grant was presumably rendered invalid by the Act of Resumption of 1449, but it does not appear certain that the following warrant for its revival took effect, since no Letters Patent in pursuance are to be found in the Calendar of Patent Rolls. A similar grant of forty marks a year was granted to Plummer's successor, Henry Abyndon, on 16th March 1456,<sup>6</sup> to date from his appointment at Michaelmas 1455. This grant was renewed by Edward IV on 10th July 1465.<sup>7</sup>

### PUBLIC RECORD OFFICE.

Warrants (Chancery), Series I, File 764.

No. 9426 (29 Henry VI), A.D. 1451.

*Memorandum quod istud breve liberatum fuit domino Cancellario Anglie apud Westmonasterium xiiij<sup>o</sup> die Maii anno subscripto exequendum.*

Henri by the grace of god Kyng of Englande and of Fraunce and Lorde of Irland To the most reverent fader in god Johan Cardinale Archebyssshope of York primat of Englande oure Chaunceller, gretyng. We late you wite that we have understande by a supplicacion presented unto us on the behalve of our welbeloved servant Johan Plummer oon of the Clercs of oure Chapell within oure housholde and the Children of the same, howe that when they had thaire fynding in

<sup>1</sup> See Dr. Grattan Flood's article in *E. H. R.* for 1918 (vol. xxxiii, p. 83).

<sup>2</sup> *Cal. Pat. Rolls*, 1436-41, p. 519.

<sup>3</sup> *Cal. Pat. Rolls*, 1441-6, p. 311.

<sup>4</sup> *Ibid.*, p. 333.

<sup>6</sup> *Cal. Pat. Rolls*, 1452-61, p. 279.

<sup>5</sup> *Ibid.*, p. 455.

<sup>7</sup> *Cal. Pat. Rolls*, 1461-7, p. 457.

oure greet warderobe, they lay there by v. or vj. wekes for to sue for thaire clothyng and other necessities and often tymes thay myghte not be spedde, and so oure Lady masse and dyvyne service in oure saide Chapell was not doon, ne myghte not by thaim as it shulde have be. And also thaire goyng to oure saide warderobe letted thaim greetely of thaire lernyng. Wherupon we by thavis of oure Counsail sezing the saide inconvenientes, commaunded the saide Johan to ordeine for the fyndyng of viij. Children of oure saide Chapell for the whiche charge and good service that the saide Johan had doon unto us and sholde doo, graunted unto him xl. marc' by our lettres patentes yerely to be paide of the aunage and subside of oure Towne of Bristowe as in oure saide lettres patentes it is conteigned, the which xl. marc' is resumed into oure handes by thauctorite of oure parlement late holden at Leycestre. And so the saide Johan hath founden the saide Children sihe the feest of Saint Michel the yere of oure Regne xxviiij unto this tyme at his owne propre goodes unto his greet charge and hurte withoute oure special grece be shewed unto him at this tyme. Wherfor we tendrely considering the premysses have of our especiall grace graunted unto the saide Johan as well for the service that he hath doon unto us by longe tyme passed and shall do in tyme to come in kepyng of oure Ladye masse in oure householde as in fyndyng governing and techyng of the saide viij. Children for oure saide Chapell xl. marc' to have and take yerely from the feest of Estre last past duryng the tyme that the saide Johan shall have the kepyng of the saide Children or of any other in the stede of hem of thissues profites Revenues and commoditees commyng of oure manoirs of Solyhull and Sheldon with thaire appurtenaunces in the countee of Warrewik by the handes of the Shirrief of the same Countee fermours Baillifs Receyvours Approvers or any other occupiours of the saide manoirs and either of hem for the tyme beyng, at the feestes of Saint Michel and Pasche by evyn porcions. So we woll and charge you that herupone ye do make oure lettres patents with oure writtes of liberate Currant and Allocate dormant in due fourme. Any Act of Resumpcion made or ordeygned in this oure present parlement extende not, ne be prejudiciall in any wyse to oure saide graunte. Or any other statute act ordinaunce provision Resumpcion or commaundement in contrarie herof made notwithstanding. Yeven undre oure prive seel at Westminster the x. day of May. The yere of oure Regne .xxix<sup>th</sup>.

FRANK.

## *The Discoveries at Spiennes*

By M. AIMÉ RUTOT, Hon. F.S.A.

FOR the past sixty years the environs of the village of Spiennes, south-east of Mons in Hainault, Belgium, have continually provided archaeologists with evidence in great abundance. The banks of the Trouille valley have been inhabited almost continuously since man first appeared on the earth, that is since the beginning of quaternary times. The relics of these successive occupations by man are distributed according to their date on three of the four terraces, at the respective elevations of 266, 233, 100, and 7 feet above the river level. On the 233 ft. terrace is found an industry of considerable interest, still almost entirely of eolithic character and typical of the first transition from the primitive industry to the palaeolithic. On the 100 ft. terrace a seam of flints at the base of the early alluvium contains an enormous development of the first palaeolithic industry which was named pre-Chelles by the late Professor Commont. This is the industry corresponding to the Piltdown skull in England, and to the second (133 ft.) and third (83 ft.) terraces of the Somme valley at St. Acheul. It also occurs on the high ground of North Kent (Swanscombe, Galley Hill, etc., on the 100 ft. terrace).

In the railway-cutting at Spiennes the pre-Chelles group includes, among hammers, knives, side-scrappers, end-scrappers, and borers, the earliest weapons known, which give a palaeolithic character to the whole industry. These weapons are pointed for offensive purposes, or take the form of rudimentary daggers and maces (*casse-tête*) of flint; and it may be mentioned that the large piece of elephant bone from Piltdown corresponds to the flint maces of Spiennes.

Professor Commont, in establishing the pre-Chelles industry, confused two industries which can be clearly distinguished at Spiennes and elsewhere in the Haine valley. Besides the pre-Chelles group properly so called there is the Strépy series. Before the Chelles period the splitting up (*débitage*) and shaping (*taille*) of flint were practically unknown, nearly all the implements and weapons being adapted from nodules, which give the industry a coarse appearance. The Strépy industry, on the other hand, is marked by a systematic splitting and fashioning of the flint, though there is always a minimum of flaking, just enough for the use intended.

The flint-seam of the 100 ft. terrace also contains a fine series of typical Chelles implements, as in the Somme and Thames

valleys. Lastly, at the base of the upper quaternary loam is clearly seen the lower phase of Le Moustier, with side-scrapers, typical points, and hand-axes, accompanied by a cold fauna including mammoth, woolly rhinoceros, and reindeer.

On the low terrace there comes first the Mesvin industry, of eolithic appearance but of lower St. Acheul date; and above that are sandy beds containing upper St. Acheul flints of rather peculiar type. Still higher, at the base of the upper loams, extends a vast factory-site of lower Le Moustier date, with hand-axes.

The Aurignac, Solutré, and La Madeleine stages are not represented at Spiennes, but that of Mas d'Azil exists in the neighbourhood, to the north and east. The Mas d'Azil culture, the latest palaeolithic horizon, is followed by that of Tardenois, which is represented in adjacent districts but not at Spiennes itself. Then comes a fine succession of neolithic industries, which developed on the plateaux and slopes. At Spiennes the neolithic opens with the industry of Le Flénu, which might be taken for pre-Chelles specimens if the geological conditions were not so different. Le Flénu comprises first a flint industry of eolithic aspect, then primitive weapons, such as points for attack, daggers, and maces.

Eventually, on the same site, this savage population made continual progress, re-inventing the art of flint-chipping, and so passing rapidly, by stages corresponding to Chelles and St. Acheul, to the well-known culture of Spiennes, with its numerous chipped celts, shell-mound axes (*tranchets*), etc. This is the lower Spiennes horizon, corresponding to Le Campigny. Gradually the inhabitants took to polishing their implements and thus passed into the age of polished stone or upper Spiennes culture. In Belgium this is followed by the phase of Omal, which closes the neolithic period. Characteristic are the hut-circles of Hesbaye (west of Liège), but Omal is not represented at Spiennes. From the same locality two complete skeletons of Le Flénu men have been recovered, also one skeleton and fragments of the polished stone period. Many animal bones of the same period as well as remains of food are preserved in Brussels Museum. These have been named, and show that in the age of polish there were still no domestic animals. Coarse pottery and implements of bone or red-deer antler complete the list of finds. To finish the archaeological story, mention should also be made of Gaulish and Roman remains, as well as of a Frankish cemetery of the fourth century with many richly furnished burials. Most of the material from Spiennes is deposited in the Royal Museum of Natural History at Brussels.

*An early pewter coffin-chalice and paten found  
in Westminster Abbey*

By the Rev. H. F. WESTLAKE, F.S.A.

IN a paper read before the St. Paul's Ecclesiological Society as far back as 12th November 1885, the late Sir William Hope laid down the main principles to be adopted in determining the dates of early chalices and patens of English manufacture. So far as I am aware nothing that has been written since has served to modify these principles in any marked degree. He classified the pre-Reformation chalices in eight sections. Between the first four and the last four of these there was a marked distinction, due to the spread in the fourteenth century of the custom of laying down the chalice on the paten to drain after the ablutions. The effect of this custom was the abandonment of the round-footed chalice, which would be unstable in such a position, and the making of chalices with hexagonal bases. For as practical a reason the hemispherical design of the bowl of the chalice was abandoned in favour of a conical shape which would drain the more easily in such a position.

The chalice under review belongs to the earlier or round-based group, and it will be convenient, therefore, to note the four subdivisions into which this group may be separated :

*Type A. c. 1200-c. 1250.*

Broad and shallow bowl. Stem, knot, and foot plain and circular.

*Type B. c. 1250-c. 1275.*

Broad and shallow bowl. Stem and knot wrought separately from bowl and foot, one or other (or both) polygonal, foot plain and circular.

*Type C. c. 1275-c. 1300.*

Broad and shallow bowl. Stem and knot as in *B*; circular foot, but the spread worked into decorated lobes.

*Type D. c. 1300-c. 1350.*

Bowl deeper and more conical. Otherwise as in *C*.

One further distinction remains to be drawn. The earliest chalices are found to have a quasi-lip, but this seems to have been soon abandoned. Its occurrence, therefore, in a particular chalice may be of as much, or perhaps more, importance than other characteristics which divide the sections. Of the earliest section but three examples were known to survive in 1885. Two of these are at Chichester and Lincoln respectively, and the third, which

until recent years was in use at Berwick St. James, Wilts., is now at the British Museum. I shall claim that this example from the Abbey provides a fourth. As will be seen from the illustration, it has this quasi-lip as well as the other characteristics of Type *A*. What, perhaps, the picture does not completely show is that the base is circular.

The chalice and paten were found in a stone coffin accidentally disclosed in 1913 near the Vere monument in the east aisle of the north transept. The coffin had evidently suffered one removal at



Pewter coffin-chalice and paten from Westminster Abbey.

least from its unknown original place of deposit. The lid with a cross may still be seen close to where it was found. The chalice and paten were replaced with the bones of the occupant of the coffin, which is now sealed by the pavement of the aisle. It is not possible now to determine to whom the coffin belonged, but if the chalice may be allowed to date it as belonging to the first half of the thirteenth century, it may well be that the bones are those of Abbot Richard de Berkyng, who died in 1246 and was first interred in the old Lady Chapel. Like Katherine de Valois, he must have been removed when the chapel was demolished, but no trustworthy record remains to show where. The arguments for this identification depend mainly on the elimination of other possibilities and need not here be detailed. To Mr. Thomas Wright, Clerk of the Works, belongs the credit of photographing the chalice and paten before their replacement, and thus preserving a record of some importance which would otherwise have been lost.

## Notes.

*Inspectors of Ancient Monuments.*—The Inspectorships of Ancient Monuments for England, Scotland, and Wales, in the Department of Ancient Monuments in H.M. Office of Works, which hitherto have been half-time appointments, have now been put on the establishment as whole-time posts. Major J. P. Bushe-Fox, F.S.A., is appointed Inspector for England, Mr. W. J. Hemp, F.S.A., Inspector for Wales, and Mr. J. S. Richardson, Inspector for Scotland.

*Ordnance Survey: appointment of Archaeology Officer.*—The appointment of Mr. O. G. S. Crawford, B.A., as Archaeology Officer of the Ordnance Survey is an interesting new departure, for which antiquaries will be grateful to the Director-General, Col. Sir Charles Close. Hitherto any local assistance given to the Survey in its task of recording the sites of discoveries and vanished buildings has been spasmodic and unorganized; and a special effort will now be made to collect and examine local information in each district as the various sheets of the Survey map come up for revision. To this end an appeal will be made to the Congress of Archaeological Societies, of which Mr. Crawford is the new secretary; and specially qualified individuals will be asked to act as official correspondents, with certain privileges as regards the maps covering the area concerned. All available printed material will also be utilized, and the utmost done to complete a piece of work that only a Government department can undertake.

*Corpus of Runic Inscriptions.*—Professor Baldwin Brown and Mr. Bruce Dickins of the University of Edinburgh have undertaken to prepare for publication by the Cambridge University Press an annotated Corpus of Runic Inscriptions in Great Britain, carved, incised, or represented in relief on or in stone, bone, wood, metal, or other such material. Runes in manuscripts will not be included, nor will those in the later Scandinavian characters in the Isle of Man, for with these Mr. Kermodé has dealt fully in his recent work on the Manx Crosses. Apart from these, the number of such monumental runic inscriptions, including those on coins, is not very great, and a considerable body of material is already prepared, but with a view to completeness the compilers will be most grateful if antiquaries interested in the subject will report any examples with which they are acquainted. Runic inscriptions in the larger and better-known public collections or published in archaeological works of national scope are naturally already on the list, but particulars are desired of objects in private possession or in local museums.

*British Museum Guide-books.*—New editions of two British Museum Guide-books have recently been issued, and the price has been raised in either case to half a crown. That dealing with Greek and Roman life was first published in 1908, and now appears with twenty-two extra illustrations. The Bronze Age Guide, after serving for sixteen years, has been considerably rewritten, and enlarged by forty-seven illustrations and thirty pages of text. An attempt has been made to

trace the origin and development of leading types—the celt, halbert, rapier, sword, spear-head, and buckler—before a description is given of individual objects in topographical order. The collection was greatly enriched in 1909 by Mr. Pierpont Morgan's gift of Canon Greenwell's gold and bronze specimens.

*British Museum Medieval Collection.*—The medieval collections of the British Museum, transferred from the former Medieval Room to the west end of the King Edward the Seventh Galleries (lower floor), have been open to the public since July. The gold ornaments, including the Franks and Waddesdon collections, are still withdrawn from exhibition, and it is feared that some time may elapse before accommodation is provided for them.

In many ways the collections do not gain by their change of place. They are taken out of their historical sequence and cut off from their former neighbours to accompany porcelain and pottery; the sense of unity suggested by the occupation of a single room is lost in the immensity of the new gallery; the discontinuous pier-cases projecting from the walls are not so well adapted as the old wall-cases for the exhibition of continuous series. The homelier objects illustrating domestic life are to some extent crowded out by lack of space, and where shown seem exiled in their present architectural environment. On the other hand, the substitution of lighting from both sides for the old top-lighting has undoubtedly proved of advantage to other kinds of objects, such as enamels and fine metal-work, especially to reliefs of all kinds: the ivory carvings, seals, and alabasters have all profited by their migration, and familiar friends like the Grandisson ivories are seen better than ever before.

In the cases along the north side of the gallery are arranged: Ivories and Alabasters, Enamels, Church metal-work, and English seals. Along the south side are: Foreign seals, Domestic metal-work, Minor Sculpture, Clocks and Watches. The table-cases in the several bays contain as far as possible objects complementary to those in the adjoining cases; while the contents of cases down the middle of the gallery are connected with the collections opposite. A popular feature is the tall clock by Isaac Habrecht, formerly at the top of the main staircase, but now standing free and kept going, to the evident pleasure of visitors. The armour is somewhat inadequately displayed in two cases set against the large piers at the west end.

When arrangements for due security have been completed, the Waddesdon Collection and the other objects of high intrinsic value formerly in the old Gold Ornament Room will occupy the two extremities of the gallery.

*Wayland's Smithy, Berkshire.*—Owing mainly to the zeal and pertinacity of Mr. Harry d'Almaine, Town Clerk of Abingdon, enough is now known of the famous monument called Wayland's Smithy, on the Berkshire Downs near the White Horse, to correct the false impression given in *Kenilworth* by Sir Walter Scott, who never saw what he called the Cave. It is scheduled as an ancient monument, and Mr. Peers, the Chief Inspector of Ancient Monuments, with Mr. Reginald Smith supervised the recent excavations, for

which the Earl of Craven not only readily gave permission, but also provided the labour. Mr. d'Almaine and Rev. Charles Overy rendered much assistance, and Mr. Dudley Buxton has examined the human remains discovered. The results are to be communicated to the Society early in the session, and will be found to confirm in the main a sketch made by John Aubrey about 1670. As may be seen in the present number of the *Journal*, it is to Aubrey also that we owe the discovery of the ring of sockets within the rampart at Stonehenge; and the value of such early records increases with every vindication of their accuracy.

*The excavation of Segontium.*—Excavations have been carried out in half an acre of land immediately outside the wall of the Roman fort of Segontium, at Carnarvon, during August, September, and October last, under the superintendence of Mr. A. G. K. Hayter, F.S.A. Two ditches have been found, both double. The outer ditch had been discontinued for a space of about 30 ft. on the west side. Both arms end abruptly. The gap lies just south of the centre of the west wall of the fort and should indicate an entrance, but the road metalling fails within 30 ft. of the outer ditch. During excavations four wells were discovered. Some rubbish pits have been emptied and their contents have added to the finds, which include fragments of pottery, brooches, and coins. These date from the first to the fourth century. Some leather includes one piece 14 in. by 16 in., with needle holes along one edge, and a metal-studded leather boot. No foundations of houses have been uncovered, but some post-holes and traces of timber and wattle indicate the existence of wooden buildings of some description. It is hoped that next year subscriptions to the Segontium Excavation Fund will enable the Excavation Committee to open up some of the land within the wall of the fort. An interim report on the work will appear in *Archaeologia Cambrensis*.

*Excavations at Bryn y Gefeiliu, Carnarvonshire.*—Preliminary excavations were carried out in February and March last on a Roman site lying in a bend of the river Llugwy between Capel Curig and Bettws y Coed. Operations began on a group of buildings ranged round a square of about 140 ft. to 150 ft. On the western side the existence was established of a continuous range of rooms, 120 ft. long by 24 ft. wide, with walls from 4 ft. to 5 ft. high in places. Parallel to this a wider range of the same length of a more elaborate plan was excavated, with several small rooms at the northern end, all showing considerable evidence of alteration and rebuilding. The northernmost room, with part of the passage leading to it, was floored with large slabs of slate with sawn edges, which can be paralleled on other sites in North Wales. The floors of the other rooms were of clay. In this slate-floored area were found portions of several large amphorae, but otherwise little pottery or other material was recovered from the rooms. A considerable amount of pottery was, however, found in a layer lower than any of the existing buildings. All this can be dated between about A.D. 80 and A.D. 120. Other finds included a considerable number of small pieces of lead, some of it worked; portions of glass bottles, etc.; *scoriae* and remains of hearths, suggesting that this part of the site may

have been used as workshops. No coins were found. The extreme limit of the pottery so far found seems to be at about A.D. 150.

Five hundred feet to the east of these buildings a trial trench was cut through a slight bank and ditch, disclosing the remains of a loose stone rampart and of two ditches of a fort. The approximate distance from the top of the rampart to the outer edge of the ditches was 50 ft. The other boundaries of the camp have not been accurately determined as yet, but it is probable that the area is about 3 acres and that the buildings to the west are contained in an annex, of which the boundaries are suggested by slight banks, sufficient to preserve the site from inundation during floods. The pottery from the trench is also not later than the middle of the second century.

*Date of the Boulder-clay in Suffolk.*—The results of excavations undertaken in the summer by a party of subscribers at High Lodge, near Mildenhall, Suffolk, were communicated to an extra London meeting of the Prehistoric Society of East Anglia on 20th October. High Lodge, which has yielded a large number of hand-axes as well as flake-implements of Le Moustier character, has for years been a problem, and it was important to determine the relation between the brick-earth deposited on the western slope of the hill and the boulder-clay exposed on the roadside at the top. Skertchly's observations on this and kindred sites, incorporated in the Geological Survey Memoir of 1891 (sheet 51 NE.), have not met with general acceptance, and the trend has been rather in the opposite direction, owing to the alleged absence of human work in the boulder-clay. Mr. Reid Moir's recent discoveries at Ipswich and Professor Marr's analysis of the geology on the present occasion are all in favour of Skertchly's view; and the worked flints found deep below boulder-clay at High Lodge include end-scrapers on blades of the same order as the brick-earth finds 100 yards away. The orthodox English view is that the boulder-clays and other glacial deposits preceded the appearance of palaeolithic man, whose remains are found in what archaeologists call the Drift, that is, the terrace-gravels and contemporary deposits. If Skertchly's evidence is to stand, confirmed as it is by recent excavation, it must be admitted that the boulder-clay (or at least a boulder-clay) came not at the beginning but at the end of the Drift period, and can be identified with the Würm glaciation of Le Moustier times. Egyptian specimens of this period were shown at the meeting by Professor Seligman, who has followed in the steps of Pitt-Rivers and found *in situ*, beside the Nile, types corresponding to various stages of the palaeolithic in Europe.

*Recent archaeological work in Italy.*—Dr. Ashby communicates the following: During the year 1920<sup>1</sup> no discoveries of outstanding importance have occurred in Italy, and publication has unluckily fallen considerably behind, owing to difficulties which are nowadays felt the whole world over. In Rome itself the most important discoveries have been made underground, in the course of modern improvements; a new group of tombs has been found, in a district

<sup>1</sup> For 1919 see my reports on *Archaeological Research in Italy* in the *Times Literary Supplement*, January 15 and 22, 1920 (pp. 33, 50).

that had already produced many, near the Porta Maggiore. One chamber contains interesting views of the interior of a walled city; while another has a group of twelve men—not the Apostles, for there is no clear trace of Christian influence. On the north-west, in a new quarter near the British School, a part of the catacomb of Pamphilus has been rediscovered: we may note an *arcosolium* containing an altar faced with slabs of marble—the first that has been found in the catacombs. On the south a *hypogeum* with interesting paintings has been found on the Via Appia, which marks the transition between the use of cremation and that of inhumation, both rites being found.<sup>1</sup> Of the far more important tombs under the church of S. Sebastiano I have already spoken.<sup>2</sup> I may add that a first report on the tombs discovered near S. Paolo has recently appeared,<sup>3</sup> and that a portion of them will remain permanently visible.

Outside Rome work continues both at Ostia and at Pompeii, though nothing in regard to the latter has recently been published. At the former the remains of a fine house on the Pompeian plan have been discovered below the later buildings, in which, to save space, the modern type of apartment house was largely used. Fronting on the main street, now cleared for nearly half a mile, a building which may be the temple of Augustus has recently been cleared.<sup>4</sup>

A description of an interesting group of houses, of the first half of the second century A.D., two of the apartment and one of the Pompeian type, remarkable for the interest of the paintings they contain, has recently been published by Calza.<sup>5</sup> They probably had three stories above the ground floor, and were united by a common façade running along one side of the block, the centre of which was occupied by a garden, and the other side by a line of shops. The whole no doubt belonged to a single owner, who probably inhabited the 'Pompeian' house himself.

Calza further maintains that in the partial demolition of this group of houses and the use of part of the site as a rubbish heap, we have evidence of a sudden decline in the prosperity of the town, which he attributes to the greater importance given by Constantine to Porto, on the other side of the river. It had been previously dependent on Ostia, but now became the principal harbour of Rome and an independent episcopal see.

These are at present the two outstanding sites in Italy where excavation is going on without interruption. Important work is also being done at Veii, where the excavation of a temple, which produced some splendid archaic terra-cotta statues a few years back, is still in progress. From Sardinia comes news of further discoveries.<sup>6</sup> Two marble heads, of the younger Drusus (?) and of Trajan, were found at Terranova (the ancient Olbia), and other sacred fountains and wells (one with a sanctuary erected over it, resembling that of Sardara) have been studied by

<sup>1</sup> Mancini in *Not. Scavi*, 1919, 49.

<sup>2</sup> *Times cit.*

<sup>3</sup> G. Lugli in *Not. Scavi*, 1919, 285 (fully illustrated).

<sup>4</sup> Giglioli in *Not. Scavi*, 1919, 3 sqq.

<sup>5</sup> *Mon. Lincei*, xxvi (1920), 301 sqq.

<sup>6</sup> *Not. Scavi*, 1919, 113 sqq.

Taramelli, though a more complete account of the dolmens in the neighbourhood of Buddusò has already been given.<sup>1</sup> We may also notice an interesting account of a Lucanian hill fort not far from Potenza,<sup>2</sup> of which I have given a fuller account elsewhere: and the fuller publication of some fine mythological bas-reliefs representing the sacrifice of Diana, the triumph of Bacchus, and a dance of Satyrs, found in a Roman villa near Sorrento, which may probably be identified with that of Pollius Felix, the friend of Statius.<sup>3</sup>

The rearrangement of the important collections of the Lateran in Rome is shortly to be described by Mrs. S. Arthur Strong; while we may also note the rearrangement of one of the more important of the provincial picture galleries, that of Ancona.

### Reviews

*Cowdray and Easebourne Priory in the County of Sussex.* By SIR WILLIAM H. ST. JOHN HOPE, Litt.D., D.C.L., London: 1919. Published at the offices of *Country Life*. 14 $\frac{3}{8}$  x 10. Pp. xiv + 144, with 53 full-page Plates. £4 4s.

This fine book will have a special appeal to antiquaries, as being the last published work of one of the best antiquaries of his time. Sir William Hope did not indeed live to see its publication, but the marks of his care and thoroughness are everywhere apparent, and the result is admirably summed up in the preface contributed by Sir Aston Webb. 'All that is authoritatively known', he says, 'of historic interest concerning the land and buildings of Cowdray is here set down, for the future edification and information of all interested. The sources of all information are given—nothing is taken for granted—but the actual sequence of events is plainly described without adornment or unnecessary elaboration.'

The praise is well deserved, but full acknowledgment must also be made to the present owner of Cowdray, Viscount Cowdray, who on acquiring the estate in 1908 made it his business to repair and preserve not only the long-neglected ruins of Cowdray House, but also the remaining buildings of the Priory of Easebourne and the foundations of the early fortified house of the Bohuns on St. Ann's Hill by Midhurst, and by so doing made it possible for the book to be written.

Produced in a way worthy of the reputation of the proprietors of *Country Life*, with type, printing, paper, and illustrations of the best, the book is a fitting record of the collaboration of a cultured and public-spirited owner with an eminent architect and an eminent antiquary. If one small grumble be permissible, it is that the grouping of all the notes on each chapter at the end of the chapter is better calculated to enhance the beauty of the printed page than the comfort of the reader, who must be constantly turning forward and back in search of enlightenment among the tall pages and the many plates with which the book is provided.

<sup>1</sup> Mackenzie in *Papers of the British School at Rome*, vi, 136 sqq.

<sup>2</sup> V. di Cicco in *Not. Scavi*. 1919, 243. See *J.R.S.*, ix, pt. 1.

<sup>3</sup> Levi in *Mon. Lincei*, xxvi (1920), 181.

It is doubtless due to the circumstances of publication that the meaningless rendering of Sir W. Fitzwilliam's 'word' *Loyaulat et saprouvera* appears on pp. 72 and 73, when the right reading is clearly shown, *Loyaulate* (for *Loyaulté*) *saprouvera*, on Grimm's drawing on plate 18: also that Grimm's name appears as Grimon at p. 66.

An account of the early history of the manor leads to a description of the foundations excavated on St. Ann's Hill in 1913. These are assigned to the middle of the twelfth century, on such evidence as the few pieces of moulded stonework provided, and belonged to a fortified house standing on the top of an earthen mound. The walled area is an irregular oval, with hall and chapel on the east, and, at the south, a remarkable pear-shaped enclosure which is explained as a shell keep. To this house Cowdray, by a truly ingenious piece of popular etymology, is fabled to have served as a dairy (cow-dairy); a fable satisfactorily disposed of in a note by Mr. Paley Baildon, who shows that *la Codray*, as it appears on the earliest record, means a hazel wood. There was evidently a house at Cowdray, possibly on the same site as the present house, at the end of the thirteenth century, but the late excavations disclosed no remains of it *in situ*.

The history of the present house begins with Sir David Owen, who married the heiress of the Bohuns about 1488, and before his death in about 1535 had made considerable progress with the building. Sir William Hope attributes to him the eastern range of the quadrangle, including the hall, chapel, great chamber, and kitchen, the northern range and the north end of the western range, up to the great gatehouse, and parts of the kitchen offices in the southern range. The house was completed, and a good deal altered in the process, by Sir William Fitzwilliam, who bought the estate from Sir Henry Owen, son and heir of Sir David, during his father's lifetime. The legal process involved is complicated, and is set forth in detail, this part of the story being also from the pen of Mr. Baildon. Sir Henry does not come well out of the business: Mr. Baildon shrewdly conjectures that he was in financial difficulties, and managed to raise money on the sale of his inheritance without his father's consent. The story is too long to tell, but Fitzwilliam seems to have been in possession by 1530, and in 1533 received licence to crenellate; probably, as Sir William Hope remarks, the latest of such licences to be issued.

Fitzwilliam was made earl of Southampton in 1539, and, dying in 1542, left his Sussex estates to his half-brother Sir Anthony Browne, subject to his widow's interest. But it is clear that Sir Anthony, who died in 1548, two years before Lady Southampton, was in possession of Cowdray from 1545 at least, and to him is due the well-known series of paintings in the great parlour, which were fortunately copied before their destruction by fire, and engraved and published in 1788 by the Society of Antiquaries. For the rest of its history Cowdray remained with the Brownes, created Viscounts Montague in 1554, till the double tragedy of 1793, when the eighth viscount was drowned in the Rhine at Laufenburg, and on

24th September the house was completely destroyed by fire. It remained a neglected ruin for more than a century, receiving no further attention than the periodical pulling down of any parts which seemed specially dangerous, so that the north and south ranges were almost entirely destroyed, and the west range greatly diminished. With the advent of the present owner, however, a new era has begun, and the ruins have been freed from ivy and carefully repaired. The fine series of photographs with which the book is illustrated are supplemented by a set of drawings made by S. H. Grimm between 1781 and 1785, which with Sir W. Hope's coloured ground-plan form as complete a record of the building as can be desired. Whatever may happen to Cowdray in the future, its history at least is secure.

The last section of the book deals with the little priory of Easebourne, a house of Augustinian nuns, probably founded early in the thirteenth century. On such a congenial subject Sir William Hope is at his best, and full of ingenious solutions of the various puzzles which arise. Perhaps the most interesting point is the use of the northern part of the eastern range, adjoining the presbytery of the nuns' church. The space between church and chapter-house is greater than the normal arrangements would require, and the dormitory above is much larger than such a small monastery would need. The suggestion is that the prioress occupied this end of the range, an idea borne out by the provision in Sir David Owen's will for the making of a 'stage quere' or gallery above the old quire, so that the nuns might come to it from their dormitory into the great chamber and thence into the quire 'and nobody to see them'. The route was clearly northward from the dormitory on the first floor, so that the great chamber, doubtless that of the prioress, was between the dormitory and the church.

C. R. PEERS.

*The History of St. Bartholomew's Hospital*, by NORMAN MOORE, M.D.

London: 1918. C. Arthur Pearson, Ltd. Two volumes. 10 $\frac{7}{8}$  x 8 $\frac{1}{2}$ .

Pp. xxii + 614; xiv + 992. £3 3s.

All who are interested in the history of London and of medicine owe a deep debt of gratitude to Sir Norman Moore for the exhaustive account he has written of the institution with which he has been so long associated. Students will look forward to the promised addendum to the history containing a calendar of all the charters of the hospital.

The first volume of the History treats almost wholly of the property of the hospital and its donors from the date of the foundation of the priory and the hospital in 1123, and it is this volume which contains the more valuable part of the work for the topographer and historian of the City. The number of early London charters now for the first time printed is very large, and among them are no less than twenty-four associated with Henry Fitz Ailwin, the first mayor. We have references to most of the early London families, and a point which is brought out is the cosmopolitan character of the City and the quickness with which foreigners became absorbed into the native population; this was notably so with the Italian families of Buccointe (*Bucca uncta* or oily mouth) and Bukerel

(Bucherelli). The lack of a return for London in the Domesday Book gives added value to these twelfth- and thirteenth-century charters, for as yet we know little of this most critical period of the history of London. It is mainly by the study of land charters such as these that our knowledge on this subject is advanced.

The second volume of the History deals principally with the internal economy and organization of the hospital, and with its reconstitution under Henry VIII in 1544. From this date we have a full account of hospital management, surgery, and medicine as practised at St. Bartholomew's, and biographical notes of all the more famous physicians, surgeons, sisters, and nurses who have served there.

Amongst numerous illustrations are reproductions of the most interesting of the charters. The method adopted by Sir Norman Moore of printing charters partly in the text and partly in notes, sometimes in full and at others in abstract or in fragments, is not ideal for purposes of study. A more convenient form would have been to print the charters together in an appendix.

WILLIAM PAGE.

*Chapters in the Administrative History of Mediaeval England. The Wardrobe, the Chamber, and the Small Seals.* By T. F. TOUT, M.A., F.B.A. Manchester: University Press. 1920. Vols. i and ii. 8 $\frac{7}{8}$  x 5 $\frac{3}{4}$ . Pp. xxiv + 317; xvi + 364. £1 16s.

This is the first half of an administrative history of the departments of State most closely connected with the sovereign, and is to extend to the year 1399. The two volumes now issued cover the history of these departments, with the exception of certain subordinate sections, to the death of Edward II. The two volumes to come will complete the period, and will contain in addition studies of the 'Great Wardrobe' and the various 'Privy Wardrobes', and descriptions of the actual seals used so far as impressions of them remain.

The interest of these volumes is therefore more historical than strictly archaeological. The subject is somewhat obscure, and as yet very little worked. For the administration of the Wardrobe itself in its full development the main printed authority is still the *Liber Quotidianus* printed by this Society in 1787. The *Collection of Ordinances for the Government of the Royal Household*, similarly printed in 1790, though not containing the earliest ordinances, is still the most accessible and useful collection of such documents. So it is not inappropriate that some space should be devoted here to an account of Professor Tout's book.

The aspect of the Wardrobe, however, which was mainly interesting in past times, was the reflection in its accounts of the everyday life of the king. His clothes, his furniture, his retinue, his jewels were duly noted, and were regarded as evidence of the degree of material civilization to which this country had attained. Professor Tout is in no way concerned with this side of the matter. His design is to show, so far as he can, what place the king and the officers of his household, as distinguished from the more formal institutions of Parliament, the Chancery, and the Exchequer, took in the actual machinery of government. How great a part this was may be deduced from the single

consideration that until Stapeldon's reform of the Exchequer in 1324 a very large part of the national expenditure was administered through the Wardrobe alone. A glance at the Issue Roll of the Exchequer for one of the later years of Edward I will show that the bulk of the money paid out, for whatever purpose employed, was paid out on the Wardrobe account, which consequently occupies something like three-quarters of the whole roll. The king, by writ of Liberate, assigned enormous credits to the keeper of his Wardrobe, who drew on them for all the expenses of the army, navy, and diplomatic service. Even the records required for dealings with other nations were largely in the keeping of the Wardrobe, and we may safely conjecture that the great Registers of Muniments (Books A and B) of the Treasury of the Exchequer were originally Wardrobe Registers and represent the arrangement of the Chests containing the documents copied in them.

Even in the thirteenth century, and still more in the fourteenth, it was impossible for such functions to be performed by an unorganized department, and Professor Tout's book traces the development of the Wardrobe from its beginnings as a personal service to the powerful and complicated engine described in the *Liber Quotidianus*, the school in which were trained the most successful financial administrators of the reigns of Edward I and Edward II. Here also we find the history of successive attempts of the barons to limit or to control the action of the king, as exercised through his Wardrobe and Household. The task is a very difficult one, since the records of the Wardrobe are scattered and imperfect, and evidence has had to be drawn from a wide field.

This is equally true of the history of the 'Chamber', which corresponds in theory with the Privy Purse of the sovereign, but was used at various periods, particularly by Edward III, for financial operations of the greatest national importance. Indeed it might be said that almost all the transactions with Italian financial firms were conducted primarily by the Chamber or the Wardrobe, and only affected the Exchequer through them.

Just as the Wardrobe and Chamber stood in more intimate relation to the king than the Exchequer, the offices of the Privy Seal and the Signet successively intervened between the Chancery and the king. Professor Tout shows that the keeper of the Privy Seal was originally the controller of the Wardrobe, and that the seal was the royal seal for that department. As the Wardrobe gradually acquired a certain independence, a 'secret seal' or Signet took the place of the Privy Seal, and its keeper received the title of secretary, which had at one time been occasionally used for the keeper of the Privy Seal, though probably without the special significance which we now attach to the word. Professor Tout lays considerable emphasis on the failure of a scheme for consolidating the secretariat, which he attributes to Baldock, and which would, had it succeeded, have produced a 'Great Chancery' like that of France, and concentrated the control of Great Seal, Privy Seal, and Signet in a corporation of Chancery officials. It is one of this author's merits that he does not lose sight of the connexion of English and continental practice in matters of administration.

It is impossible to indicate in a review the extent and variety of the

information which is here collected. When the work is complete and provided with an index it will be possible to take full advantage of its contents. A useful feature is the provision of an ample contents-table and a list of the longer notes and of the documents printed. Professor Tout makes one suggestion which seems at least doubtful. He quotes certain payments *pro anulo regis acquietando* and regards them as possibly indicating the use of a signet by Henry III. Is it not equally likely that these payments, which are classed as 'alms', are the ransom of the king's ring offered on the altar in honour of a saint?

C. JOHNSON.

*A descriptive account of the Roman pottery made at Ashley Rails, New Forest.* By HEYWOOD SUMNER, F.S.A. London, 1919. 8 $\frac{7}{8}$  x 5 $\frac{1}{2}$ . Pp. 37, with plans and illustrations. 2s. 6d.

Mr. Sumner is to be congratulated on his account of the Roman pottery made at Ashley Rails, which he has illustrated with many excellent drawings of the types found, thus making it a useful work of reference. It is to be hoped that his example will stimulate other archaeologists in this country to interest themselves in similar undertakings, in order that the dating of pottery in use in the last centuries of the Roman occupation may eventually be established with accuracy.

It is perhaps unfortunate that Mr. Sumner has given Samian numbers to some forms which do not absolutely conform to them, as this may mislead those who are not thoroughly conversant with the dating of Roman pottery. For instance it is inaccurate to say that any of the vessels found are Samian form 29. This number has presumably been given to some of the Ashley Rails examples because of the sharply defined angle in their sides and their moulded feet. But these features are not uncommon in many bowls which could not be termed form 29, one of the principal characteristics of which form is the slightly outbent moulded lip, a feature entirely absent in all the bowls from Ashley Rails to which that number has been given. Form 29 hardly survived into the second century, and the pottery cannot well be earlier than the latter part of the third. The fact, however, that certain of the vessels found do closely conform to Samian types such as 36 and 38 is of much interest. Both of these forms were among the latest made, and that they should have been copied by the Ashley Rails potters helps considerably in the dating of these kilns.

There is a good deal of evidence that stamped ware, somewhat similar in type to that from Ashley Rails, was prevalent on the Continent in the fifth century, and Saxon vessels with decorative motives of this description are well known, but it does not follow that the present finds are of as late a date. The evidence acquired in recent years has established the fact that most of the types found at Ashley Rails were in use in the fourth century or even slightly earlier, but closer dating has not been possible. The coins found bear out this dating, and it is to be hoped that Mr. Sumner will be able to carry on his very useful investigations and in the near future obtain some more definite evidence, which will prove of the greatest value in determining the dates of Roman sites in other parts of the

country. For this New Forest ware was not made only for local markets, but has been found as far away as Wroxeter and Corbridge. Also many of the forms from the Ashley Rails kilns occur in pottery from other factories, and their close dating would be of the utmost importance.

That practically no structural remains were found appears to indicate that the buildings were constructed of wattle and daub, and it is not improbable that, had the mortar and pebble floor been fully uncovered, divisions in it, showing the position of walls, would have been found. It is not clear from Mr. Sumner's account whether any of this mortar and pebble floor was taken up during the excavations. This point is of some importance, as objects found under the floor might prove of great value in giving a clue to the date of its construction and thus furnish valuable evidence as to the period in which the kilns were in use.

J. P. BUSHE-FOX.

*Guide to the Collection of Irish Antiquities: Catalogue of Irish gold ornaments in the collection of the Royal Irish Academy.* By E. C. R. ARMSTRONG, F.S.A. Dublin: H.M. Stationery Office, 1920. 10 $\frac{3}{8}$  x 7 $\frac{1}{2}$ . Pp. 104 with 20 plates. 2s.

A new catalogue of the gold ornaments in the collection of the Royal Irish Academy now housed at the National Museum, Dublin, has been prepared by Mr. Armstrong. It contains an introduction and details of 475 specimens, most of which are illustrated in the text or on the twenty plates, all being drawn half-scale. Sir William Wilde's catalogue was published in 1852, and in the interval registration has become more systematic, and a great effort has been made to rescue from oblivion every detail that might throw light on the date and purpose of these antiquities. The majority belong to the Bronze Age, but the most celebrated hoard (from Brougher or Newtown Limavady, co. Derry) is only about nineteen centuries old, and there are a few Viking pieces. It is now generally agreed that Ireland produced an abundance of gold three to four thousand years ago, and exported typical ornaments to the adjacent parts of Europe; but there is wide scope for conjecture and debate with regard to the nature and sequence of whole groups of specimens. The best-known form, the *lunula* or lunette, is a case in point; and though the chain found on one in Dépt. Manche supports the view adopted by the author that they were collars, it is difficult to explain why these crescents, which must have been uncomfortable and even dangerous to wear, are ornamented only towards the points, and left plain (except for narrow borders) on the broadest part forming the front. A wooden case, evidently made for one of these ornaments, has been found in co. Cavan; and a wooden box has come to light in co. Tyrone containing a still more mysterious object. A bar bent into a semicircle and terminating in two hollow cones is a type frequently found in Ireland, and has received the unfortunate name of *fibula*, on the assumption that it was used as a brooch to fasten the dress. Wilde remarked that the head of the cones showed the most wear owing to the friction of the pin; but no pin has ever been found in association with these objects, and occasionally engraving is found at

that very point. Further, the inside of the cones is sometimes ornamented and evidently meant to be seen, whereas the handle is plain, as if intended to be covered in use. Pending a complete explanation, the term 'grip' might be adopted as non-committal, and the type may prove to be related to the oath-rings (*Schwurringe*) common in northern Europe about the same date. Another problem is presented by the *bullae* which curiously resemble the Etruscan pattern adopted in classical Italy by the boys of noble and wealthy families. At present no intermediate link can be found, and the date remains uncertain. Such questions as these have been brought nearer solution by Mr. Armstrong's carefully collected evidence as to the circumstances of discovery; and this Guide will no doubt stimulate the ingenuity of Irish and other archaeologists. In conclusion attention may be drawn to the very remarkable find at Lattoo, co. Cavan, in 1919, first published in *Man*, June 1920, no. 45. About 11 ft. deep in a bog lay two 'grips' with conical ends and two bracelets, together with an elaborately engraved disc 4.8 in. across, all being of gold. Previous discoveries in Ireland and elsewhere support the view that the disc was originally a sun-symbol, perhaps mounted on a model car like that of Trundholm Moss in Denmark. This single hoard therefore confirms the dates assigned to three definite gold types on other and independent grounds; and its inclusion in the Catalogue at the last moment is a matter for congratulation.

REGINALD A. SMITH.

### *Periodical Literature*

*Archaeological Journal*, vol. 63: Sir Henry Howorth analyses in detail the Chronicle usually attributed to Florence, and gives reasons for assigning its compilation to John rather than to Florence of Worcester. Professor Baldwin Brown has an article on the Anglo-Saxon as an artist, Mr. Du Boulay Hill describes the pre-Norman churches and sepulchral remains of Nottinghamshire, and Mr. Bothamley contributes a careful account, with plans and other illustrations, of the walled town of Aigues-Mortes. There are also papers by Lord Dillon suggesting a Tyrolese origin for the effigy of Richard Beauchamp at Warwick, by Mr. Fryer on the effigy of Bridget, countess of Bedford, at Chenies, and by Mr. Ellis on an antique silver brooch inscribed in twelfth-century Norman French.

*Journal of the British Archaeological Association*, N.S., vol. 25, contains a copiously illustrated account of the churches of Great Rollright, Hook Norton, and Wigginton, Oxon., by the President of the Association, a paper on the Medieval Bestiaries and their influence on English decorative art by Mr. G. C. Druce, and various papers on Colchester read in connexion with the Association's Annual Meeting. There are also papers by Mr. W. A. Cater identifying St. Mary Newchurch with St. Mary-le-Bow, and by Mr. T. F. Tickner on the cathedral and priory of St. Mary of Coventry, in which is reproduced a plan showing a most unusual arrangement of the cloister which can only be based on a misreading of the evidence.

*Journal of Roman Studies*, vol. 8: Sir William Ramsay contributes the second portion of his studies in the Roman province of Galatia, dealing with dedications at the sanctuary of Colonia Caesarea. Mr. J. G. Milne writes on the shops of the Roman mint of Alexandria, and Mr. A. H. Smith describes the portrait relief of L. Ampudius Philomusus and his wife and daughter, recently acquired under peculiar circumstances for the British Museum. There is also a full bibliography of the works of the late Professor Haverfield by Dr. George Macdonald.

*Numismatic Chronicle*, vol. 20, pt. 2, contains two papers by Mr. G. F. Hill, one describing the Greek coins acquired by the British Museum, mainly from the Weber collection, in 1919, and the other on a hoard of coins of Eadgar, Eadweard II, and Aethelred II found at Chester. M. de Morgan contributes an essay on the Semitic inscriptions on Characenean coins, and Mr. S. W. Grose gives a short account of the collection of Greek coins bequeathed to Balliol College by Dr. Strachan-Davidson.

*Transactions of the St. Paul's Ecclesiological Society*, vol. 8, pt. 4, contains an interesting inventory of the goods at Pleshy College by the late Sir William Hope and Mr. Atchley, a paper by Dr. Norman on St. Mary Aldermary and St. Mildred, Bread Street, and a transcript by Mr. Craib of the inventory in the Public Record Office of Church Plate received in the Jewel House in the Tower of London in the reign of Edward VI.

*Berks, Bucks, and Oxon Archaeological Journal*, vol. 25, no. 2, continues an account of certain churches, Sutton Courtenay and Abingdon Abbey, and a survey of Wallingford in 1550, and contains a paper by the late Lt.-Col. Wheelton Hind of Stoke-on-Trent on the approximate dates of Wayland Smith's Cave and the White Horse of Berkshire. He rightly considered the monument as the chamber of a long barrow dating from neolithic times, but should not have used the term 'dolmen' in this connexion. Wayland's Smithy lies north and south, most of the chambered barrows being on the contrary east and west, so that it is difficult to follow his argument that 'from the careful way in which these ancient tombs were oriented, sun worship must have been in vogue'. The connexion with Wayland could only date, as he pointed out, from pagan Anglo-Saxon times, many centuries after the tomb was in use; and there is reason for thinking that the stones were exposed at the time the name was given much as they are now, the long barrow having been denuded.

*Transactions of the Bristol and Gloucestershire Archaeological Society*, vol. 41, contains continuations of Dr. Fryer's paper on Gloucestershire Fonts and of Mr. Walters's on Gloucestershire Bell Foundries, the Bristol foundry being dealt with in this volume. Mr. St. Clair Baddeley contributes papers on Norman and Medieval Gloucester, Mr. C. E. Keyser has a profusely illustrated account of six churches in the neighbourhood of Cirencester, and Mr. Bartlett contributes a paper on the discovery of the chapel of St. Blaise at Henbury. In addition Canon Wilson prints from the Worcester *Liber Albus* correspondence between the abbot of St. Augustine's, Bristol, and the prior of Worcester in 1311, and Colonel Buckton a transcription of the North Nibley Tithe Terrier.

*Transactions of the Cumberland and Westmorland Antiquarian and Archaeological Society*, vol. 20: the late Professor Haverfield contributed a paper on the provisioning of Roman forts and another on Old Carlisle; Mr. P. Ross continues his studies of Roman roads, describing that between Low Borrow Bridge and Brougham Castle, and a note by the late Canon Rawnsley records the rediscovery of a small Roman altar (*C. I. L.* vii, 938). Mr. T. H. B. Graham has four papers, on Carlatton, on the manors of Melmerby and Ainstable, and a further part of his study of the Eastern Fells. Mr. W. G. Collingwood writes on the cross at Penrith, known as the Giant's Thumb, and the number also contains communications on Walney Chapel, on Cartmel Priory, on papers from Bardsea Hall, on the Glaisters of Cumberland, and a calendar of documents belonging to Mr. Burrow of Crosthwaite.

*Journal of the Derbyshire Archaeological Society*, vol. 42, contains papers by Mr. H. Kirke on Sir Henry Vernon of Haddon, who died in 1515, based on records in the Belvoir muniment room; by Rev. H. Lawrance on the Heraldry of Dugdale's Visitation of Derbyshire 1662-3; on the south court of Codnor Castle, with plan and other illustrations, by Mr. W. Stevenson, and the concluding part of Mr. S. O. Addy's study on House-burial, with examples in Derbyshire.

*Transactions of the Essex Archaeological Society*, N.S., vol. 15, contains an account by Major Mortimer Wheeler of the excavation of the Balcerne gate at Colchester, undertaken on behalf of the Morant Club. The plan of the gate appears to be unique in Britain, but parallels can be found on the Continent at Autun, Turin, and Nîmes. Mr. Miller Christy contributes a detailed account of the eighteen Roman roads in the county with a full bibliography, and there is also a paper on the forest of Blackley, and the first of a series of articles on ancient stained glass in Essex.

*Transactions of the East Herts. Archaeological Society*, vol. 6, pt. 2, contains a description, with plan, of the church of St. Mary, North Mimms, by Mr. H. G. Spary; a record of the expenses of the household of John, king of France, during his captivity in Hertford castle, by Mr. H. C. Andrews; an account of the descent of the manor of Roxford, by Mr. W. F. Andrews, and a description of the Holwell parish registers by Mr. H. F. Hatch.

*Transactions of the London and Middlesex Archaeological Society*, N.S. 4, contains papers by Sir Edward Brabrook, Mr. A. Bonner, and Mr. P. M. Johnston on Staple Inn; another paper by Mr. Bonner on St. George's in the East and the Minorities, and the concluding portion of Dr. Martin's paper on early maps of London.

*Proceedings of the Somersetshire Archaeological Society*, vol. 65, contains a paper by Sir Henry Maxwell Lyte relating the devolution of the property of Serlo de Burci and outlining the descent of the baronial family of Martin. Mr. H. Symonds publishes a transcript of documents showing the manner in which the great Civil War affected the inhabitants of the country round Brent Knoll. Mr. Bligh Bond publishes the ninth report of his excavations at Glastonbury Abbey, describing the discovery of the supposed Loretto chapel, Dr. Fryer continues his description of Somerset monumental effigies, and

Dr. Hensleigh Walter reports the discovery of Roman buildings, pottery, etc., at 'Stanchester' in the parish of Stoke-sub-Hamdon.

*Historical Collections for Staffordshire*, vol. for 1919 issued by the William Salt Society, contains a full paper on the early history of the parish of Blithfield, with an account of the parish church, by Rev. D. S. Murray, and a communication by Messrs. Bridgeman and Mander on the Staffordshire hidation. There is also published in this volume a transcript of a note-book of Gregory King, Lancaster herald (died 1712), the MS. of which is now in the William Salt Library.

*Proceedings of the Suffolk Institute of Archaeology*, vol. 17, contains a paper by Miss Layard on flint tools showing well-defined finger-grips; a description of the fine seven-sacrament font at Monk's Soham, and a transcription and annotation by the late Sir William Hope of the inventories of the college of Stoke-by-Clare taken in 1534 and 1547-8.

*Yorkshire Archaeological Journal*, vol. 25, pt. 3: Mr. W. M. P'Anson describes the church and conventual buildings of Coverham abbey, illustrated with a plan, and there is also a description, with a plan, of Crambe church in the North Riding by Mr. G. E. Kirk. Other papers include one by Mr. H. F. Killick on the memoirs of Sir Marmaduke Rawden, a Royalist knight who defended Basing and Faringdon and died in 1646; by Mr. C. J. Battersby on the word 'Anima' in Elizabethan English, showing that it meant a breastplate, cuirass, or coat of mail; a study by Mr. W. Hornsby of the Domesday 'valets' of the Langbargh wapentake, suggesting a rule for their computation; and notes on the discovery of a Roman tower at York and on a medieval entrenchment between Gargrave and Skipton.

*Société Fersiaise 45th Annual Bulletin*, contains a description of Le Couperon dolmen, Rozel, recently transferred to the Society; a note on the discovery of a neolithic kitchen-midden on the Icho Tower islet, and another note recording the finding of a fine flint implement in the St. Laurence valley. The number also contains a paper by Mr. Nicolle on the occupation of Jersey by the counts of Maulevrier from 1461 to 1468, and a description of St. Mary's church by Colonel Warton.

*Archaeologia Cambrensis*, 6th ser., vol. 20, contains a further instalment of Mr. Harold Hughes's paper on Early Christian decorative art in Anglesey; Mr. O. G. S. Crawford's account of his excavations at Hengwm, Merionethshire, the sites explored being three stone circles of the Bronze Age, a hitherto undiscovered promontory fort, and the hill-top fortress of Pen Dinas, of the Iron Age probably anterior to the Roman occupation; and papers on Scandinavian influence on Glamorgan place-names; on a smelting floor at Penrhos Lligwy, Anglesey; 'Stedworlango', a study of the fee of Penmaen in Gower; on St. Paulinus of Wales, and on the people and speech of Gowerland. The discovery of an inscribed stone of the early sixth century from Llan-sadyrnin, Carmarthenshire, is also recorded.

*Transactions of the Honourable Society of Cymmrodorion* (1918-19): Mr. Hadrian Allcroft contributes a paper on the Celtic Circle-Moot, in which he argues that the stone circle without a ditch was not in origin sepulchral, but was a place of assembly. In the same volume Professor Tyrrell-Green has a long paper on types of baptismal fonts

as illustrated by Welsh examples, and Professor J. E. Lloyd writes upon the family and early history of Owain Glyn Dŵr.

*Journal of the Flintshire Historical Society* for 1919-20 contains papers on Gwaenysgor church, by Mr. A. W. Beer, on the plate at Hawarden church, by Rev. W. F. J. Timbrell, and a translation by Mr. W. B. Jones of certain Hawarden deeds, being portions of the Moore deeds belonging to the Liverpool corporation. There is also a long paper by Mr. Edward Owen on the monastery of Basingwerk at the period of its dissolution, consisting of a collection of documents from the Public Record Office.

*Journal of the Royal Society of Antiquaries of Ireland*, vol. 49, pt. 2; Mr. E. C. R. Armstrong describes the bell shrine of St. Seanan, known as the Clogan Oir, recently sold at Christies and presented to the collections of the Royal Irish Academy. Mr. Westropp continues his studies of Irish forts, describing several in Dunkellin and other parts of southern Galway. Mr. H. S. Crawford contributes some notes on the Book of Kells and a paper on a late slab and cross at Taghmaconnell, co. Roscommon, and there are also papers on the family of De Lacy in Ireland, on Donnybrook, and on the chalices belonging to the West Convent, Galway.

*Papers of the British School at Rome*, vol. 9: Mr. G. F. Hill contributes a paper on Roman medallists of the Renaissance to the time of Leo X; Dr. Ashby writes on the Palazzo Odescalchi; Mr. R. Gardner on the Via Claudia Valeria; another paper by Dr. Ashby is entitled 'Antiquae statuæ urbis romanae', and Mgr. Mann deals with the Portraits of the Popes. Mrs. Arthur Strong publishes a sepulchral relief of a priest of Bellona and a bronze plaque with bust of Aristotle in the Rosenheim collection, while Mr. H. C. Bradshaw contributes a study for the restoration of Praeneste.

*Mémoires de l'Académie royale de Belgique*, 1920, and *L'Atlantide*, 1920: M. Rutot has recently published two lectures in support of the theory propounded in 1883 by Prof. Berlioux, of Lyon, with regard to the lost Atlantis. The contention is that the island ceased to exist, not through sinking in the ocean, but by being joined to the continent of Africa by an upheaval in historical times. It is identified as Morocco, Algeria, and Tunis, with its capital Cerne somewhere east of Agadir on the river Sus, between the Atlas and Anti-Atlas ranges. From the river Draa on the west to the Lesser Syrtis on the east there was apparently a chain of rivers and lakes only interrupted about the eleventh century B.C. by a vast earth-movement that ruined the climate and put an end to one of the great civilizations of history. According to Plato the disaster in Atlantis coincided with great floods in Greece, perhaps the deluge of Deucalion; but the epoch indicated for Atlantis in its glory is not 8,000 years before Solon (about 600 B.C.) but rather eight centuries before his time, an error of some magnitude in the story told by the Egyptian priest to the Athenian statesman. The first mention of Atlantis is in Herodotus, iv, 184-5, but from his words no one would suspect that the country had had a glorious past. About 1200 B.C. the capital was destroyed by the Amazons, and to Herodotus in the fifth century the Pillars of Hercules represented the ends of the earth. According to

the theory under notice, things were quite different a thousand years before; and M. Rutot points out a striking resemblance between the *pintaderas* (clay stamps for tattooing) of the Canary Islands and Mexico, suggesting that the lavish use of precious metals at Cerne was due to commerce with Central America. Classical scholars, however, will not be prepared to identify the first three letters of Atlantis with a common termination of place-names in Central America. The main theory is certainly attractive, and gives meaning to many local myths and traditions—a feature of recent research in the Mediterranean area. It is now held that the Minoans of Crete came from North Africa: is it possible that Knossos was an eastern outpost of Atlantis?

*Oldtiden: Tidskrift for Norsk Forhistorie*, vol. ix (Kristiania, 1920): First comes an impressive account of the Borre Fund (named after a famous burial-place on the west side of Kristiania Fjord) which has been started to finance archaeological exploration in Norway, and already amounts to over £6,000 capital. So much has been done without its help that extraordinary results may be expected of the new scheme, and the example should have a stimulating effect elsewhere.

The number is full of good things, but Hr. Nummedal's paper has a special bearing on British archaeology. In dealing with certain primitive Stone Age forms in Norway, he recalls Professor Montelius's advocacy of a Solutré period in Sweden, and suggests comparisons with the still earlier Aurignac period, hitherto unsuspected in the North. Core-like and carinated planes are illustrated as well as hammers made from pebbles, with shallow circular depressions in the faces alleged to be intended for the thumb and finger. Such are certainly found elsewhere in palaeolithic surroundings and may have continued through several periods, but in the present case geological arguments are brought forward in favour of a date before the maximum depression of the district in the *Tapes* or *Littorina* period, that is, before the earliest shell-mounds. The sites in question were on the sea-shore when the land was 60 ft. lower than it was when the kitchen middens were formed; and the interval of time has yet to be estimated. Some help may be obtained from Cornwall, where similar types have been found (with gravers) on sites 150–300 ft. O.D., mostly near the sea and invariably close to a stream or spring (J. G. Marsden in *Proc. Prehist. Soc. E. Anglia*, iii, 59, and previous papers). An equation of beds and earth-movements on either side of the North Sea would be a distinct addition to our knowledge of the Stone Age, and it may be mentioned that a raised beach at 65 ft. O.D. has been noticed on the east of Land's End, not four miles from some of the Stone Age 'floors' (H. Dewey in *Geological Magazine*, April 1913, 156). Some further observations on the successive shore-levels of southern Norway are contributed by Hr. Øyen to this number of *Oldtiden*.

*Forvännen: Meddelanden från K. Vitterhets Historie och Antikvitets Akademien*, 1920, parts 1, 2 (Stockholm). It is not surprising that an archaeological dictum by Snorre Sturlason, who wrote about 1240, should in these days need amendment. This it has now undergone at the hands of Hr. Lindqvist, who takes as his text the following passage from the Prologue to the *Ynglinga Saga*: 'As to funeral rites, the earliest age is called the age of burning, because all

the dead were consumed by fire, and over their ashes were raised standing stones (*Bautasteinar*). But after Frey was buried under the cairn at (Gamla) Upsala, many chiefs raised cairns as commonly as stones to the memory of their relations. The age of cairns began properly in Denmark after Dan Mikillate had raised for himself a burial cairn, and ordered that he should be buried in it at his death with his royal ornaments and armour, his horse and saddle furniture and other valuable goods; and many of his descendants followed his example. But the burning of the dead continued long after that time to be the custom of the Swedes and Northmen.' It may well be that cremation was the commonest burial rite in Norway and Sweden down to the introduction of Christianity; and the rule applies only to the western half of Denmark, where barrows were raised over the unburnt dead from the ninth century. Perhaps the change was due to news of the elaborate burial arranged for himself at Aix-la-Chapelle by Charlemagne in 814. But Snorre's classification is vitiated by the fact that cremation and barrow-burial are not mutually exclusive, and there are other objections. Nothing is said about the ship-burials of Norway; but standing-stones are known to be very scarce in that country, comparatively numerous in Denmark, and nowhere so common as in Uppland, the richest centre in the Viking period. The change of rite was no doubt due to an altered conception of life beyond the grave, and it is curious that a converse change took place in north-west Europe about 1000 B.C., when the Bronze Age population began to burn their dead after many centuries of inhumation. The paper is a long one, and will prove a useful commentary on the elaborate funerals described in the Sagas. Another contribution of interest consists of notes by Adolf Noreen on the ancient tribal names of northern Europe; and an early form of the Swedish name is said to have the same meaning as Sinn Fein.

### *Obituary Notices*

*Robert Munro, LL.D.*—By the death of Dr. Robert Munro, which took place at his residence, Elmbank, Largs, on 18th July 1920, a notable figure in archaeology has passed away. He was born in Rosshire on 21st July 1835, and was thus in his eighty-fifth year. His early education was obtained at Tain Royal Academy, whence he proceeded to the University of Edinburgh and took his M.A. degree. To qualify for his intended profession he entered the School of Medicine there and had the benefit of instruction in anatomy from Professor, afterwards Principal, Turner, with whom in later years he formed a close friendship. After taking his medical degree he settled down in a practice in Kilmarnock, and for a space of about twenty years led the life of a busy and successful country practitioner. When in 1877 the Ayrshire and Galloway Archaeological Society was formed Dr. Munro became one of the original members, and having previously had his attention arrested when on the Continent by the display of

relics from the Swiss lake dwellings, responded readily to an invitation to help in the excavation of Crannogs in Ayrshire undertaken by that Society under the leadership of Mr. Cochran Patrick. His zeal grew with the widening of the field of exploration, and in time Munro became the leader of the enterprise and in 1882 published the results of his researches in the volume entitled *Scottish Lake Dwellings*.

A few years later his resources were such as to free him from his arduous professional labours, and with his interest steadily fixed on the aspect of the subject which had primarily attracted him, he retired from his practice and devoted himself henceforth entirely to archaeology. To make himself conversant with continental analogies he indulged his taste for travel, and in 1888, on the invitation of the Society of Antiquaries of Scotland, he delivered a course of Rhind Lectures, taking as his subject *The Lake Dwellings of Europe*. These lectures, illustrated by the skilful draughtsmanship of his wife, were published in book form in 1890, and appeared in a French edition in 1908. The merit of the volume was quickly recognized and gave to its author a wide reputation. As a result of frequent visits to the Continent, invariably with some archaeological quest as his object, various papers dealing with prehistoric remains abroad were contributed by him to the *Proceedings of the Society of Antiquaries of Scotland*, of which Society he was one of the honorary secretaries from 1886 to 1899. The account of a visit to the shores of the Adriatic was published in book form in 1895 under the title of *Rambles and Studies in Bosnia-Herzegovina and Dalmatia*. Two years later he published a volume entitled *Prehistoric Problems*, which showed the drift of his mind from the researches on lake dwellings to the scientific study of primitive man, induced by his early training in anatomy. This was followed in 1899 by *Prehistoric Scotland and its place in European Civilization*, being a general introduction to a series of county histories of Scotland. Other works which he produced were *Archaeology and False Antiquities* (1905), *Palaeolithic Man and Terramara Settlements* (1912), and *Prehistoric Britain* (1914), and numerous contributions to learned societies.

He took a keen interest in the Anthropological section of the British Association, of which section he was president in 1893, and in 1903 he delivered an address at the meeting of the Association at Southport. In 1894 he was appointed Chairman of the Committee charged with the conduct of the excavations on the site of the Glastonbury lake dwellings, and on the completion of that work continued his chairmanship when the Committee undertook the excavation at Meare. His absorbing interest in archaeology induced him to endow an annual course of lectures in Edinburgh University on Anthropology and Prehistoric Archaeology, and in 1910, at the age of seventy-five, he himself delivered the first course. With continuing vigour, in the following year he delivered the Dalrymple Lectures in Archaeology in the University of Glasgow, the matter of both courses being embodied in his *Palaeolithic Man and Terramara Settlements*. Both the Universities of Edinburgh and Glasgow conferred upon him the honorary degree of LL.D.

A man of tall stature, with an erect carriage and a powerful frame,

he was conspicuous by his somewhat rugged features, his bushy eyebrows, and dark piercing eyes. He was a sturdy antagonist in argument and was loath to leave a controversy even though the point at issue had ceased to arouse interest. His friends will long remember how he loved to draw from its hiding and worry afresh the subject of certain structures excavated on the Clyde which produced contentious relics. In his home in Edinburgh, assisted by his wife, he was never happier than in the entertainment of any noted savant visiting the city, and in the gathering of his friends, old and young, to meet him. Though never a Fellow of our Society, he acted as one of the local secretaries for Scotland from 1901-13.

As an archaeologist Munro was eminently sane and reliable, and his methods, due no doubt to his professional training, thoroughly scientific. To his other qualities may be added an absorbing enthusiasm and a sense of good fellowship by which he will be kindly thought on by those who enjoyed the privilege of his friendship.

A. O. C.

*George Payne, F.S.A.*—Kentish archaeology has suffered a severe loss in the death of Mr. George Payne, which occurred on 29th September. His first notable archaeological work was the excavation in 1872 of the Roman remains at Milton-next-Sittingbourne. Many other discoveries of both Roman and Saxon remains followed at other sites in the neighbourhood and the results were published in his *Collectanea Cantiana*, while the objects discovered have found a permanent home in the British and Maidstone Museums. Another important excavation carried out by him was that of the Roman villa at Dartford. His great work, however, was the foundation of the Eastgate-House Museum at Rochester, into which he threw himself with characteristic energy, and this museum will be a lasting memorial of his enthusiasm and knowledge. He was elected a Fellow of the Society of Antiquaries in 1880.

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